

Demand and Needs Assessment Studies: Alcohol and Other Drugs

Contract Final Report

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EXECUTIVE SUMMARY

INTRODUCTION

The Purpose Of The State's Project

The Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Substance Abuse Prevention (CSAP) awarded Alabama a prevention needs assessment contract through its national State Needs Assessment Initiative. The award funded three integrated prevention needs assessment studies. The needs assessment initiative gives states the opportunity to collect objective data that it can use to develop a more efficient approach to its prevention planning efforts. The data garnered from these studies provide public health information on the prevalence of substance use and a variety of problem behaviors that youth often experience. The data also provide information on the prevalence of risk and protective factors. Risk factors are thought to be precursors of substance use and problem behavior, while protective factors are thought to mitigate the effects of risk factors. With these data, the State will be able to estimate its service needs, determine areas of the State where services are needed, and allocate its prevention resources so the appropriate populations are receiving the services that best fit their prevention needs.

The entire family of studies had several objectives:

- Determine prevention needs and their statewide distribution
- Identify existing services
- Determine if the distribution of services matches need
- Provide reliable data that can guide policy and planning

Alabama's family of integrated studies includes a student survey, a social indicator study, and a community resource assessment study. The State of Alabama, Department of Mental Health and Mental Retardation entered into a subcontract with Auburn University and DATACORP for the conduct of these studies. Alabama received its award in 1999. We began planning for the student survey and data collection for the social indicator study immediately. We launched the student survey in January of 2001, and we gathered the CRA data between October of 2001 and late summer of 2002.

- This report integrates the findings of the other three studies
- It uses the most rigorous, insightful data
- It answers questions that no single study could answer
- It will serve as a foundation for prevention policy and planning

The Nature, Scope, And Findings Of Each Of The Component Studies

The Alabama Student Survey

The overarching goal of the Alabama Student Survey was to determine the prevalence of substance use and the existence of risk and protective factors for substance abuse among Alabama's youth. We collected primary data using a set of standardized questions from a large, statewide sample of public school students. Although these data are cross-sectional and, therefore, cannot reliably predict long-term substance use behaviors, they provide an objective snapshot of current use.

The Alabama Student Survey answers four key research questions:

- 1) What is the prevalence of lifetime and current ATOD use among Alabama's adolescent public school population and various subpopulations (i.e., grades, gender, races/ethnicities)?
- 2) What is the prevalence of risk and protective factors that may predict substance use among this student population?
- 3) How frequently do Alabama's adolescents commit delinquent acts such as stealing cars, selling drugs, or assaulting other persons with the intention to harm them)?
- 4) How can specific prevention programs target individuals who are at risk for substance use?

Some particularly salient findings from the study emerged:

- Prevalence rates were highest for use of alcohol, tobacco (particularly cigarettes), and marijuana.
- Several developmental patterns emerged in the data. Students in the upper grades reported higher substance use rates than students in the lower grades.
- Inhalant use did not follow a developmental trajectory. Use of this substance peaked for middle school-aged students, rather than for high school-aged students.
- Male students were more likely than female students were to report committing delinquent behaviors in every category.

- Several developmental patterns emerged for delinquent behaviors. Students in upper grades reported higher prevalence rates for getting drunk or high at school, and they reported selling drugs more than students reported in lower grades.
- “Friends’ use of drugs,” “favorable attitudes toward drug use,” “sensation seeking,” “engaging in antisocial behavior,” “interaction with antisocial peers,” “community laws and norms favorable to drug use,” and “perceived availability of drugs and handguns in the community” were risk factors that were particularly informative of certain types of substance use.
- Only the perceived risk of drug use was informative of protection against substance use (and only for the use of marijuana).
- Prevalence rates for risk or protective factor scale/substance use outcomes were higher for alcohol and tobacco than for inhalants, marijuana, or other drugs.
- Recommendations for the Leadership and Resiliency Program were particularly prominent.

The Social Indicator Study

The second study in Alabama’s family of prevention needs assessment studies, the social indicator study, also collected data on risk and protective factors. In contrast to the student survey, the social indicator data applied to both adults and adolescents in the State and collected data at the county-level. Together, these two studies provide a comprehensive picture of the types of prevention services needed throughout the State.

The central purpose of the social indicator study is to assess substance abuse prevention needs across Alabama using reliable and valid county-level social indicator data. The primary objectives of the study were to:

- Investigate whether valid and reliable indices of risk and protection can be created from the social indicator data
- Examine the distribution of risk and protective factors across counties and regions
- Assess which science-based prevention programs suit each county’s needs

The study had several key findings:

- Most indicators were reliable over time. The exceptions were homicide rates, juvenile arrest rates for violent crimes, juvenile birth rates, event dropout rates, rates of dropouts prior to ninth grade, arrest rates among

youth aged 10 to 14 for vandalism, arrest rates among youth aged 10 to 14 for alcohol-related offenses, juvenile suicide rates, alcohol-related traffic fatality rates, and rates of pregnant women in substance abuse treatment.

- The data did not support the creation of valid indices of risk and protection that follow the Hawkins and Catalano model
- The social indicators data did not have a clear-cut relationship to estimates of risk and protection from the Student Survey.
- Maps of indicators displayed a variety of geographic patterns
- The Nurturing Program and the Quantum Opportunities Program were recommended for 81% of Alabama's counties.
- Project PATHE and Project STATUS were the second most popular programs and were recommended for 57% of the State's counties.
- Two programs were recommended in 40% to 45% of Alabama's counties. Both programs address underage and adult drinking. Challenging College Alcohol Abuse was recommended in 45% of Alabama's counties, although it may be appropriate only for counties with colleges or universities. The Community Trials Intervention to Reduce High-Risk Drinking was recommended in 40% of the counties.

The Community Resource Assessment

The primary objective of the community resource assessment (CRA) was to inventory and assess existing prevention resources among providers who receive SASD funding. This study assessed whether the current system can meet the State's strategic goals for prevention and it identified areas where the system could be enhanced. The data from this study, in conjunction with data from other studies in Alabama's prevention needs assessment project, will allow us to examine the match between current prevention programs and identified prevention needs. We designed the study to answer the following key research questions:

- What prevention services are available in the State?
- Have the State's goals for prevention service delivery been met?
- What are the strengths and weaknesses of the Statewide prevention system?
- What are common barriers to providing services?

Key findings of the Community Resource Assessment Survey include

- Life skills/social skills training for youth and information dissemination are widely offered. Since these services are so widely offered, we recommend that planners at both the State and local levels coordinate services to ensure that services do not overlap.
- The goals most frequently endorsed by providers are key elements of most substance abuse prevention programs, and their popularity is therefore appropriate. However, few programs reported focusing on goals that address environmental issues, such as reducing youth access to substances; developing community laws that restrict substance use; working towards clear policies regarding substance use; and strengthening community norms, laws, and attitudes against ATOD use. We strongly recommend Block Grant providers increase the number of activities related to these goals.
- In general, Block Grant providers worked collaboratively with other organizations. Statewide, approximately 76% of programs participated in joint planning with other groups, and 71% co-sponsored activities. Sharing funding or staff was less common but still practiced by 35% of Block Grant providers in the State.
- Two of the most common barriers in the State were lack of community interest and lack of public awareness of services offered. Lack of transportation, participant drop out, and insufficient staff due to a lack of funding were also common.

2. METHODOLOGY FOR INTEGRATIVE ANALYSIS

Overall Framework And Analytic Approach

The primary aim of this report is to synthesize the data from the three studies in order to better understand met and unmet prevention needs in Alabama. A series of research questions guides this exploratory approach.

- What is the relationship between the risk and protective factors measured by the student survey and the risk and protective factors measured by social indicators studies?
- Can the social indicators be used to predict youth risk and protection during “off years” of the survey?

- How do sub state areas and target populations with highest rates of ATOD use (by drug) compare with sub state areas and target populations that exhibit high levels of risk and protection?
- How does prevention need vary by demographic characteristics?
- How does prevention need vary by program type?

The CSAP model of risk and protection provided the initial framework for the analytic approach, but the data did not support this model. Given the empirical findings, it was necessary to create an alternate framework and analytic approach. In this approach, the student survey and social indicator data are both used as measures of the need for services. However, the data from each study are considered separately. This framework allows the community resource assessment data to be compared with both the social indicator and student survey data without combining the latter two data sets.

Methods For Answering Each Research Question

What is the relationship between the risk and protective factors measured by the student survey to the risk and protective factors measured by social indicators studies?

The Social Indicators Study employed several methods in an attempt to validate grouping the social indicators into the factors of the Hawkins & Catalano model. A Modified Multitrait-Multimethod Matrix was used to determine if the factors displayed convergent and discriminant validity as would be expected assuming that different factors represented different concepts within a conceptual framework.

Can the social indicators be used to predict youth ATOD use during “off years” of the survey?

The Student Survey study estimated risk and protection based on a Signal Detection Theory model. The Social Indicator study estimated risk based on measures already collected at the sub-state level. Since the *a priori* defined factor indices failed the Modified Multitrait-Multimethod Matrix test of their validity, a factor analysis was conducted in an attempt to create summary indices from the social indicators. The predictive validity of the extracted risk factors was tested using self-report data collected from youth by the Alabama Student Survey on Risk and Protective Factors, another study in the prevention needs assessment project (Alabama Department of Mental Health and Mental Retardation Substance Abuse Services Division, 2003). Regression models used the extracted risk factor scores (3), a protection indicator (1) and the interaction of the risk factor and protection scores (3) to predict 6th and 10th graders' risk levels.

How do sub state areas and target populations with highest rates of ATOD use (by drug) compare with sub state areas and target populations that exhibit high levels of risk and protection?

Maps were used to compare the geographic patterns of ATOD use (by substance) with risk and protection. Each county was shaded according to that county's prevalence rate of ATOD use, risk, or protection. To allow for variation across age, we created maps for both junior high and high school students.

How does prevention need vary by demographic characteristics?

Since prevention programs typically target either junior high or high school students, we created estimates of the county prevalence rates of risk and protection for each of these two populations. We then mapped these risk and protective factor prevalence rates to illustrate any geographic patterns within the State. We created similar maps by gender.

How does prevention need vary by program type?

A table was supplied of the top programs recommended by the student survey and social indicators studies for each county. For the student survey, this was determined by first matching science programs to risk scales. Then, each individual was assigned recommended programs based on the scales on which they were determined to be at risk. The three most frequently recommended programs within each county were reported. For the social indicators, we computed the three most "problematic" indicators in each county. The three most problematic indicators were the three indicators that were the most extreme relative to other counties. Appropriate science-based programs were then matched to each indicator, resulting in the list of top programs recommended for each county.

3. RESULTS

What Is The Relationship Between The Risk And Protective Factors Measured By The Student Survey To The Risk And Protective Factors Measured By Social Indicators Studies?

The conclusions from the Modified Multitrait-Multimethod Matrix revealed that a factor-level grouping of indicators could not be validated. As a result, comparable factors were not created with which to evaluate the relationship between the Social Indicator and School Survey factor scores. The recommendation for each study was to address risk and protection based on the individual indicators or scale scores.

Can The Social Indicators Be Used To Predict Youth ATOD Use During “Off Years” Of The Survey?

None of the models were able to predict average youth risk by county. As a result, it was concluded that none of the extracted factors, protective indicators, or their interactions had predictive validity in terms of youth risk for substance use. This finding was thoroughly examined for the influence of outliers by verifying that dramatic changes in the parameters did not occur with the removal of one or more counties' data from the analysis. No outlying counties were found.

How Do Sub State Areas And Target Populations With Highest Rates Of ATOD Use (By Drug) Compare With Sub State Areas And Target Populations That Exhibit High Levels Of Risk And Protection?

Alcohol Use

Junior High School Students

The highest prevalence rates of self-report lifetime alcohol use for junior high school students were concentrated in the southwest of the state. Although the prevalence rate of individuals at risk for alcohol use was high throughout the state (>80% in every county), it did not closely follow the same county relative to county pattern as lifetime usage. In particular, Sumter and Choctaw counties had high rates of usage, but low rates of risk relative to other counties. The opposite was true of Dallas and Lowndes counties, implying high risk relative to usage. Prevalence rates of protection more closely followed the pattern of usage with higher rates of protection in the northeastern areas of the state relative to the south and southwest.

High School Students

A similar pattern of usage to junior high school students was seen in the high school students' usage prevalence rates, but the rates were overall higher. The counties with the highest prevalence rates of usage were generally found in the west and southwest of the state, though the pattern was less pronounced. The prevalence of high school students at risk was high statewide (> 89% in every county). Risk more closely followed usage for high school students than for junior high school students, but there were exceptions. Greene County was one of the highest in terms of use, but lowest in terms of risk. The relationship between protection and use was also less clear for high school students than for junior high school students.

Lifetime Tobacco Use

Junior High School Students

There was no clear geographic pattern of self-reported tobacco use in junior high school students. Interestingly, risk prevalence rates did appear to follow a similar

pattern to usage, though protection did not. The counties that were highest in protection followed a clear geographic pattern and were mostly concentrated in the north and east of the state.

High School Students

Again, as was true for junior high school students, there was no clear geographic pattern to the use prevalence rates or risk prevalence rates, but the two appeared to be related. Contrary to the junior high school students, the prevalence rates for protection for high school students were low in the upper north relative to the east and middle of the state.

Lifetime Marijuana Use

Junior High School Students

Marijuana usage prevalence rates were generally lower than alcohol and tobacco across the state for junior high school students. The counties with the highest prevalence rates were mostly in the mid-east of the state in or around metropolitan areas. Risk prevalence rates followed a more clearly demarcated north-south pattern, with the counties with the highest prevalence of junior high students at risk in the south. Protection also showed strong north-south pattern, with the more protection in the north. Many of the counties, such as Russell, Macon, Bullock, Montgomery, Autauga, and Greene that had high prevalence rates of usage were also high on risk and low on protection.

High School Students

Marijuana usage overall higher for high school students and was clearly higher in and around metropolitan counties, though there were exceptions. Risk, though also high in and around most metropolitan areas was also concentrated in the southwest of the state and appeared less related to usage in that area. Protection was relatively low in metropolitan areas, but otherwise not related to risk or usage.

Lifetime Inhalant Use

Junior High School Students

Lifetime inhalant use was fairly evenly distributed between counties in the north, south and east of the state with the mid-west having a lower prevalence in junior high school students than other regions. Risk was generally lower in the northwest corner of the state and appeared unrelated to usage. Protection followed a north-south pattern with the highest rates of protection in the north.

High School Students

Unlike other substances, in high school students, the absolute prevalence rates across the state were similar or lower than in junior high school students. Inhalant use was particularly low in the south and southwest of the state. Again, the relationship to risk was unclear, but this may have been due to the overall

restricted range in values across counties. There were no validated protective factors.

Lifetime Other Drug Use

Junior High School Students

Other drug use, risk and protection followed similar patterns to inhalant use, risk and protection in junior high school students. Overall use was lower than alcohol, tobacco and marijuana, with the lowest usage in the mid-west. Risk followed a clearer north-south pattern and was lowest in the north. Protection also showed a north-south pattern and was lowest in the south.

High School Students

As was true for junior high students, other drug use followed the same patterns as inhalant use for high school students. Usage was lowest across the south and highest in the north. Overall prevalence rates for use were slightly higher for high school students than for junior high students. Risk did not closely follow usage and risk and protection appeared unrelated to each other or usage.

How Does Prevention Need Vary By Demographic Characteristics?

The previous section focused on the relationship between risk, protection and self-report lifetime usage by substance. This section focuses on differences between subpopulations on usage overall, comparing maps with rows.

Age

The prevalence rate of lifetime use of any drug (excluding tobacco) was universally higher for high school students than for junior high students. Risk prevalence rates were also generally higher or the same for high school students than for junior high school students, with the exception of many of the counties in the middle of the state, where risk prevalence rates were actually lower for high school students. Protection was also generally lower for high school students than for junior high school students.

Gender

Self-report lifetime substance use and risk prevalence rates were higher among male students than they were among female students with few exceptions. The opposite was true of protection, with female students having much higher prevalence rates. Also, the north-south pattern of use and risk was much more pronounced in females than in males, with more risk and usage in the south; while the north-south pattern of protection was more pronounced in males for protection, with more protection in the north.

How Does Prevention Need Vary By Program Type?

The Student Survey and Social Indicators Studies made program recommendations based on individual scales and social indicators. Table 5 in the main body of this report presents those recommendations by county based on that county's top three worst indicators or scales. When there were ties, all tied indicators or scales were used. When multiple programs applied to the same indicator(s) or scale(s), all those programs were presented. A legend for program abbreviations was provided in Table 6 in the main body of this report.

The programs most frequently recommended by the Student Survey Study, based on each county's the three worst scale scores were (based on 56 counties): 1) Lifeskills Training – 42 counties (75%), 2) Project Toward No Drug Abuse – 38 counties (68%) 3) Multi-component, School-linked Approaches and Stop Teenage Addiction to Tobacco – 35 counties (63%), and 4) Project STATUS – 26 counties (45%).

The programs most frequently recommended by the Social Indicator Study, based on each county's the three worst social indicators were: 1) Nurturing Program and Quantum Opportunities Program – 54 counties (81%), 2) Project PATHE and Project STATUS – 38 counties (57%), and 3) Challenging College Alcohol Abuse – 30 counties (45%).

4. CONCLUSIONS AND RECOMMENDATIONS

What Is The Relationship Between The Risk And Protective Factors Measured By The Student Survey And To The Risk And Protective Factors Measured By Social Indicators Studies?

It was discovered that forming a common set of indices based on the Hawkins & Catalano model with which to compare social indicators and student survey data was not possible. The primary reason for this was the failure of the appropriate indicators to correlate with one another. Combining indicators that do not correlate may mask real and significant effects that may be in the data as indicators cancel-out each others' effects. It was for this reason that we decided to attempt a factor analytic model of data reduction as is described in the following section. Factor analysis groups variables based on their correlation structure.

Can The Social Indicators Be Used To Predict Youth ATOD Use During “Off Years” Of The Survey?

A factor analysis was conducted on the social indicator variables following our attempt to validate the Hawkins & Catalano model using a Modified Multitrait-Multimethod Matrix. We discovered three, relatively distinct factors. These three factors were entered into regression models in an attempt to assess their ability to predict student survey risk. The results demonstrated that despite the appeal of the possibility of social indicators being used to estimate youth risk between

survey years, our data suggest this would not be prudent. The social indicator factor scores were not able to predict student survey risk.

As a result these findings, it was our suggestion that social indicators and student survey scale scores be examined individually. While student survey and social indicator data may not be summarized and interchanged, they are nonetheless useful in understanding the risk structures throughout the state.

How Do Sub State Areas And Target Populations With Highest Rates Of ATOD Use (By Drug) Compare With Sub State Areas And Target Populations That Exhibit High Levels Of Risk And Protection?

Geographic patterns of lifetime substance use were compared to the geographic distributions of risk and protection across the state. A common theme was that lifetime prevalence of use was generally high in areas with high risk and low protection. This was especially clear for marijuana. This reinforces the continued need for prevention services to focus on risk reduction and increasing protection. In addition, planners may wish to note differences in the *type* of needs present in a county. Counties that have high prevalence rates of risk and usage may require different services from those that have high risk and yet are low on usage. Counties having high risk and low usage and protection may present a special opportunity to intercept a problem before it occurs.

How Does Prevention Need Vary By Demographic Characteristics?

Age

The geographic distribution of Junior High and High School students were compared on the prevalence of any substance use (excluding tobacco), and the prevalence of any risk and protection. As would be expected, high school students were higher on substance use, with 46 of the 64 counties included in analyses reporting prevalence rates over 80% of lifetime substance use (versus none for the junior high students). High school students also showed higher risk in general and lower protection, as compared to junior high students. Prevention planners may wish to re-double their efforts at increasing protection for high school students overall in addition to focused efforts by county.

Gender

The geographic distribution of male and female students were compared on the prevalence of any substance use (excluding tobacco), and the prevalence of any risk and protection. Male students showed a generally higher and more consistent prevalence of substance use with a large majority between 77% and 82%. Females were generally lower and county prevalence rates represented a wider range of values. Risk was more-or-less evenly distributed across the state for males, while for females it showed a more north-south pattern with the higher rates spread across the south of the state. There was a huge difference between males and females on the measure protection, perceived risks of drug use.

Female county scores were almost uniformly higher than males. This result suggests that planners should make concerted efforts to increase the perceived risks of drug use among males.

How Does Prevention Need Vary By Program Type?

A set of program recommendations based on the student survey and the social indicators data were developed. Each county has a unique profile of program recommendations, based on its local needs. The recommendations from the student survey and the social indicators data are complementary in that student survey tends to focus on risk factors in the individual domain such as perceptions and attitudes, while the social indicators focus more on different types of anti-social behavior. In addition, the recommendations for the social indicators study include programs designed for adults, while the student survey only recommends programs for youth. Both studies also make recommendations for programs focusing on environmental strategies, such as reducing access to substances and developing community laws and norms.

Program recommendations are meant to serve as a resource for planners at the State and local level. Since a variety of programs were recommended for each county, planners can review the table of recommendations and select a subset of programs of interest. They should then research each program in their subset to determine the most appropriate programs for their area. To obtain information on programs of interest, planners can visit the Western Center for the Application of Prevention Technology's (CAPT) Web site (<http://www.unr.edu/westcapt/bestcapt/bestprac.htm>), review published articles, and contact program developers. This process will ensure that planners select programs that not only meet local needs but also are practical to implement and appropriate to the target populations.

Summary Of Recommendations

Each needs assessment study contributes to the overall picture of prevention in Alabama. The Student Survey and Social Indicator studies demonstrate the State's prevention needs. Each study highlights needs that the other study does not. Taken together the two studies show a host of statewide and county-level prevention needs. The table of recommended programs paints a unified picture of statewide and county-level need based on these two studies. The Community Resource Assessment study helps to complete the picture by adding information on the services the State's providers make available to its citizenry. The summary that follows presents information and recommendations as potential areas the state may wish to explore further.

This report compiled needs identified in both the student survey and the social indicator study. Where the student survey identified specific risk and protective factors based on the Hawkins and Catalano framework, the social indicator study identified areas the student survey did not address, such as the distribution of children in foster care and the distribution of youth who are already parents or

about to become parents. These youth are at tremendous risk for substance abuse problems. The maps in the reports show how the risk factors and other populations at risk are distributed throughout the State. The CRA study, on the other hand, provided useful information on target populations, numbers served, and barriers. Unfortunately, it was not as effective providing the kind of information on programs that we would have liked to have to make better recommendations about specific programs providers might adopt. This is regrettable because “programs” was a key area the survey was intended to address. The main problem with this assessment was accurate program identification. While the CRA gives a lot of information about program “type” (e.g., life skills), it does not give much information about “specific” programs. That is, programs were not usually identified by name. For instance, the CRA tells us that the majority of providers in all three funding streams provide “life skills” programs, but it does not tell us which life skills programs the providers use (e.g., Botvin’s Life Skills). It is therefore impossible to evaluate whether the programs delivering life skills education are using science-based curricula. The best recommendation we can make from the program information is that the three funding streams may wish to collaborate in an effort to reduce program overlap. We cannot suggest that a provider drop one program in favor of another because it is science-based. We therefore recommend that the State consider expanding Table 5 to include a final column that lists the provider’s program names, which can then be compared with the recommended programs from the student survey and the social indicator studies.

The state may also wish to focus its efforts on two prevention areas that are decidedly underdeveloped. One important finding that spans all three studies is the apparent need for community and school management programs. This need was shown by both the student survey and social indicator study. This finding coincides with findings in the CRA where providers noted an apparent lack of community interest and involvement in prevention. Perhaps making prevention more visible in the community would stimulate greater awareness, if not interest in prevention. This can be done by developing activities that focus on community change, which include but are not limited to services such as community mobilization, community capacity building, and working to develop and enforce effective laws and policies. These important services can increase public awareness, mobilize the local community, and make the community environment less conducive to substance use.

Another critical finding involves protection from risk and demographics. The six maps that compare risk and protection by gender clearly show that boys and girls are fairly equal on their “risk” for substance use. But the maps on protection tell a different story. Girls appear to be more protected than boys. The substance use maps show that that boys use more substances than girls. One shortcoming in the needs assessment studies is that protection was not as thoroughly measured as risk. This finding therefore suggests a few avenues the State may wish to pursue. First, if the State conducts future studies it may want to review

progress in the field in this area and try to get a better measure of protection than what was available at the time this study was conducted. Second, the data at hand suggest that substance use levels are indeed related to protection and finally, boys may benefit from efforts that focus on enhanced protection.

This set of integrated needs assessment studies provides objective data that can help guide prevention planning. Despite some of the study limitations, there is a wealth of information planners can use to bolster State and local prevention efforts. There is certainly a substantial amount of information from which communities can draw to integrate with their own knowledge to better utilize prevention resources. Local area providers are referred back to the student survey and social indicator chart books where county-level profiles are provided. These can be used to assist in both planning and allocating services. This data in conjunction with the program recommendations, based on each county's risk levels, should be extremely useful when choosing new programs to implement. At the State level the data can be used to provide information on planning and evaluation as it relates to the State Incentive Grant (SIG), and the State can use these data to enhance its statewide prevention strategies.

Future needs assessment efforts should capitalize on the findings of these studies, from both a success and a limitations perspective. The results and findings provide the State with a benchmark for future comparisons. Future needs assessment results can be compared with the results from these studies and can provide the State with useful evaluation information. At the macro level the State can then assess whether new prevention efforts funded under its SIG award are effective at reducing substance use and risk and increasing protection as they have been identified in these studies. Future needs assessment studies may also confirm whether efforts to reduce gaps in services and barriers to service are successful. Lastly, but probably most importantly, future studies will show whether the groundwork laid from these studies did indeed provide the State with a springboard from which to revisit its prevention goals and strategies and whether those goals are met and its strategies are successful.

1. INTRODUCTION

THE PURPOSE OF THE STATE'S PROJECT

The Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Substance Abuse Prevention (CSAP) awarded Alabama a prevention needs assessment contract through its national State Needs Assessment Initiative. The award funded three integrated prevention needs assessment studies. The needs assessment initiative gives states the opportunity to collect objective data that it can use to develop a more efficient approach to its prevention planning efforts. The data will inform public policy, State and community level planning, and the citizens of Alabama. The data garnered from these studies provide public health information on the prevalence of substance use and a variety of problem behaviors that youth often experience. The data also provide information on the prevalence of risk and protective factors. Risk factors are thought to be precursors of substance use and problem behavior, while protective factors are thought to mitigate the effects of risk factors. With these data, the State will be able to estimate its service needs, determine areas of the State where services are needed, and allocate its prevention resources so the appropriate populations are receiving the services that best fit their prevention needs.

Alabama's family of integrated studies includes a student survey, a social indicator study, and a community resource assessment study. The State of Alabama, Department of Mental Health and Mental Retardation entered into a subcontract with Auburn University and DATACORP for the conduct of these studies. Alabama received its award in 1999. We began planning for the student survey and data collection for the social indicator study immediately. We launched the student survey in January of 2001, and we gathered the CRA data between October of 2001 and late summer of 2002.

The entire family of studies had several objectives:

- determine prevention needs and their statewide distribution
 - identify existing services
 - determine if the distribution of services matches need
 - provide reliable data that can guide policy and planning
- The studies were conducted by the Alabama MHMR and DATACORP
 - Student Survey
 - Social Indicator Study
 - CRA
- This report integrates the findings of the other three studies
- It uses the most rigorous, insightful data
- It answers questions that no single study could answer
- It will serve as a foundation for prevention policy and planning

THE OVERARCHING THEORETICAL FRAMEWORK USED TO TIE THE FAMILY OF STUDIES TOGETHER

A line of social research that has sought to determine the factors that underlie substance use and establish theories that predict the development of these behaviors has informed studies that assess substance abuse and other problem behaviors. The emergence of risk and protective factor theories can be ascribed to the seminal research of Hawkins and colleagues (e.g., Hawkins, Catalano, & Miller, 1992; Hawkins, Lishner, & Catalano, 1985). Risk factors, they have established, can be roughly divided into two categories: contextual factors and individual and interpersonal factors. Contextual factors, such as neighborhood disorganization, comprise the societal issues and cultural milieu related to the establishment of normative behaviors and the development of laws, such as those concerning the taxation of alcohol and cigarettes. Individual risk factors include personal characteristics, such as genetic constitution and rebellious tendencies, while interpersonal factors are concerned with a person's experiences in school and interactions and relationships with family members and peers. One of the more influential interpersonal risk factors for substance use appears to be association with deviant peers (e.g., Deković, 1999).

Some researchers that have developed models that predict substance use and abuse aggregate an index that sums the total number of risk factors. This method does not consider the relative importance of each factor (Newcomb & Felix-Ortiz, 1992; Pollard, Hawkins, & Arthur, 1999). More specifically, these lines of research suggest that the sheer number of factors will predict substance use. The implication of this approach is that the more risk factors an adolescent experiences, the more likely it is that he or she will use drugs. While this type of risk factor index has been successfully employed in some studies that have found that a composite measure of risk accounted for some proportion of substance use, more research needs to be done to determine if some risk factors are better predictors of substance abuse and should therefore be weighted more than others. For instance, there are risk and protective factors that are demonstrated to be of little predictive value (e.g., self-esteem, self-efficacy; Gottfredson & Koper, 1996) that should not be incorporated into a model that associates risk with drug use. Additionally, structural equation models (e.g., Leech, Day, Richardson, & Goldschmidt, 2003; Li, Pentz, & Chou, 2002; Wills, Sandy, & Yaeger, 2002; Lynskey, Fergusson, & Horwood, 1998) may be used to uncover latent factors and modifying factors of substance use and other delinquent behaviors.

Although it may be possible to reduce the prevalence of some risk factors, such as gang involvement and academic failure, other factors, such as high community transitions and mobility and a family history of antisocial behavior, are not amendable, particularly from the vantage point of youths. Given that some risk factors simply cannot be changed, assessing the prevalence and potential augmentation of protective factors is of particular importance. Research indicates that protective factors, such as opportunities and rewards for pro-social involvement, religiosity, and perceived risks of drug use can buffer the harmful effects of risk factors (e.g., Smith, Lizotte, Thornberry, & Krohn, 1995). Whether protective factors work by exerting a direct influence on

substance abuse outcomes or by mediating the relationship between risk factors and substance use outcomes remains unclear.

Given that both risk and protective factors influence the likelihood of substance use and the development of other problem behaviors, it is of paramount concern that prevention programs be devised to both minimize risk factors and maximize protective factors. Also, since no single factor has been identified as predominantly accounting for adolescent drug use, programs that address several factors and target different levels (i.e., individual/peer, community, family, school) are optimal (e.g., Hawkins et al., 1992; Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999). Findings regarding interactions between risk and protective factors suggest that there is a complex relationship between these variables. Prevention programs should take this into account; however, the literature suggests that particular emphasis should be given to minimizing risk factors, due the fact that protective factors appear to have little buffering effect when the number of risk factors is maximal (e.g., Newcomb & Felix-Ortiz, 1992; Pollard et al., 1999).

THE NATURE, SCOPE, AND FINDINGS OF EACH OF THE COMPONENT STUDIES

The Alabama Student Survey

Purpose

The overarching goal of the Alabama Student Survey was to determine the prevalence of substance use and the existence of risk and protective factors for substance abuse among Alabama's youth. We collected primary data using a set of standardized questions from a large, statewide sample of public school students. Although these data are cross-sectional and, therefore, cannot reliably predict long-term substance use behaviors, they provide an objective snapshot of current use.

The Alabama Student Survey answers four key research questions:

- 5) What is the prevalence of lifetime and current ATOD use among Alabama's adolescent public school population and various subpopulations (i.e., grades, gender, races/ethnicities)?
- 6) What is the prevalence of risk and protective factors that may predict substance use among this student population?
- 7) How frequently do Alabama's adolescents commit delinquent acts such as stealing cars, selling drugs, or assaulting other persons with the intention to harm them)?
- 8) How can specific prevention programs target individuals who are at risk for substance use?

Target population

The study's target population was students in public school in grades 6 through 12. The target population included students in mainstream public schools as well as student in alternative schools, but not students in training schools. Alabama's training schools are not administered by the Department of Education.

While the sampling plan is presented in great detail in the Alabama Student Survey Technical Final Report, we present a brief description of the key features (sample frame, strata and comparability of the weighted sample to the respondent universe) for the reader's convenience.

Sample Frames

According to the 2001 Alabama Department of Education enrollment statistics, the size of the respondent universe was 375,719. We expected that the size of the respondent universe was similar in the winter of 2002, which is when the survey was administered.

A two-stage sampling procedure was employed, using a different frame for each stage. In the first stage, the number of classes to be surveyed in each school was selected using an enrollment database provided by the Alabama State Department of Education. In the second stage, specific classes to participate from each school (e.g., Ms. Smith's second period class) were selected. The sampling frame for each school was created from rosters of classes provided by participating schools. A copy of the roster appears in Appendix E in the Alabama Student Survey Technical Final Report.

Strata

CSAP awarded the Alabama Department of Mental Health and Mental Retardation (DMHMR) funding to survey students in grades 6, 10, and 12. The sample was to be stratified by grade within each of the State's four health planning regions. When officials from DMHMR met with the State Department of Education (SDE), the SDE expressed interest in increasing the number of strata. Specifically, the SDE wished to obtain county-level estimates for each grade in grades 6-12. This level of estimation would require sampling seven strata (one per grade) in each of Alabama's 67 counties, resulting in 469 strata. Realizing the value of these estimates for prevention planning, the DMHMR agreed to this sampling scheme and contributed its own funds to pay for the increased size and scope of the study.

Sample Size

The sample was designed so that the 95% confidence intervals would lie within $\pm 5.3\%$ of the county survey estimates. We used the Kish (1965) formula for computing the required sample size. The total number of students necessary for our sample across the state was 133,451. Since the classroom was the sampling unit in this study, the number of desired classes required may also be of interest. The reader can obtain this figure by referring to Appendix F in the Alabama Student Survey Technical Final Report.

Response Rate and Final Sample Size

The State hired a special survey coordinator who worked with the State project manager and our subcontractor to maximize the response rate. The State coordinator and project manager worked with school officials at the State, district, system, and school level during every stage of the project. Highlights of this endeavor included:

- Presenting the survey at State and district meetings of superintendents and principals
- Publishing an article about the survey in a State education newsletter
- Following up with superintendents and principals who declined to participate
- Sending reminder faxes and postcards to participating schools regarding survey dates
- Telephoning contacts at participating schools that did not send completed surveys back by a certain date

Despite these efforts, there were several counties in which a major school system declined to participate. When this occurred, we increased the number of students sampled from the remaining systems as a means to compensate for the loss in sample size. Although this increase could not make the sample representative of the missing school systems, it helped boost the precision of the sample. Utilizing these methods, we received 96,071 questionnaires.

Although the sample design was balanced and representative, some schools and students selected declined to participate. The statewide response rate was 56%, while the regional response rates ranged from 47% to 65% (see Table 1). While these response rates may appear low, they are in line with those obtained in other school surveys (e.g., combined response rates of 43%, 45%, and 52% for 8th, 10th, and 12th graders for 1994 -1995 MTF; see Gfroerer, Wright, & Kopstein, 1997). Like these other surveys, they signify that the results from this study may not apply to non-participating schools and students. In other words, there may be non-response bias,¹ although some lines of research suggest that school non-participation does not introduce substantial bias to prevalence estimates of substance use (e.g., Gfroerer et al., 1997; Johnston, O'Malley, & Bachman, 1996).

¹ It is difficult to speculate on the direction of non-response bias. On the one hand, schools and students could decline to participate in order to avoid revealing their problems. On the other hand, they could also decline because the lack of problems in their community made the survey a low priority.

Table 1. Response Rates on the Student Survey

	Statewide	Region 1	Region 2	Region 3	Region 4
Schools					
Selected	812	258	212	168	174
Ineligible	8	3	4	0	1
Refused	203	45	52	60	46
Other non-participants	18	5	7	2	4
School Response Rate	73%	79%	72%	63%	71%
Youth					
Selected	120,515	37,074	29,828	26,681	26,932
Refused/Absent	24,444	5,888	5,959	6,232	6,365
Discarded	3,249	947	807	833	662
Youth Response Rate	77%	82%	77%	74%	74%
Overall Response Rate	56%	65%	55%	47%	53%

We calculated sample weights for the completed and collected survey questionnaires to adjust for the probability of classroom selection, the stratum non-response rate, and the size of the stratum. This task was completed with the assistance of the University of Illinois Survey Research Laboratory. We then compared the weighted sample of students to the August 2001 Alabama Department of Education enrollment data (Alabama Department of Education, 2002). The detailed results of this comparison are presented as cross tabulations between 1) grade and gender, and 2) grade and race in the Alabama Student Survey Technical Final Report.

Overall, the results demonstrate that the weighted sample characteristics approximate August 2001 enrollment statistics. Within a particular gender, the breakdown of percentage by grade generally varied by less than 1% (max =0.66%). Within a particular grade, the ratio of males to females was frequently reversed in the weighted sample for lower grades (more males than females), but this ratio was so close to equal proportions that the reversal would have negligible impact. Overall, the weighted sample percentages for any one cell representing grade by gender varied by less than 1% (max = 0.97%) from August 2001 enrollment data. Results examining race by grade demonstrated that the weighted sample characteristics again approximated August 2001 enrollment statistics. Within a given race, the breakdown of percentage by grade generally varied from enrollment statistics by less than 5%. More than half of these comparisons (24) differed by less than 1%, a further 15 deviated by less than 5%, and the 3 remaining deviated by less than 10%. Within a given grade, the breakdown of percentages by race varied from enrollment statistics by less than 7%, with the vast majority (40) deviating by less than 5%.

Data collection methods

Alabama used the Substance Abuse Risk and Protective Factor Survey, also known as the Communities That Care survey, as CSAP requires the use of this instrument. Many states in the CSAP Prevention Needs Assessment program have used this instrument, including Arizona, Arkansas, Colorado, Florida, Kansas, Louisiana, Maine, Michigan, Montana, Oregon, Tennessee, and Vermont. CSAP required Alabama to use a self-administered paper survey to collect data. Survey responses were scanned using an optical scanning machine and transferred into a database, where they were stored and analyzed.

Format

A portion of this project was paid for by funds from the CSAP Prevention Needs Assessment. The Office of Management and Budget requires federally funded surveys to place a control number and statement of burden on the front page of the questionnaire. The control number and burden statement were placed on questionnaires funded by federal funds and distributed to a random subset of sampled classes. To ease the task of preparing survey packages sent to schools, these were printed in purple ink. The remaining questionnaires were printed in blue ink.

The questionnaires marked with a control number and burden statement account for less than 3% of the total sample of questionnaires. Nevertheless, the data were examined to detect mode effects. The evidence showed that mode effects would likely have a negligible effect on the survey estimates. Overall, 2.6% of the questionnaires with the burden statement were discarded (due to poor quality data), while 4% of the regular questionnaires were discarded. More importantly, there were only very small differences in the reporting of lifetime substance use (less than 2%). Neither questionnaire appeared to produce higher rates of substance use. Given the large sample size, even miniscule differences can reach statistical significance, although they may not necessarily be of practical importance.

Data Collection Period

Schools signed up to administer the survey on Tuesday, Wednesday, or Thursday of any week between January 22 and February 14 of 2002. In practice, a few schools were not able to administer the survey in February and administered the questionnaires in March instead. It would have been preferable to offer the survey on any week in February, but a conflict with other tests prevented the project from adopting this schedule.

It should be noted that the survey administration dates may introduce a seasonal effect for some schools. The research literature suggests that alcohol and other substance use increases among adults during the Christmas and New Year holidays (e.g., Lemmens & Knibbe, 1993; Uitenbroek, 1996; Cho, Johnson, & Fendrich, 2001). The same effect may also be present for adolescents. If this effect is present in the data, it would affect the past 30-day use rates among students who completed the survey in

January, but not among students who completed the survey in February. Thus, some caution is necessary when interpreting the data on past 30-day use.

Survey Administration

All school superintendents received information about the study and were asked to allow the schools in their district to participate. If they approved their district's participation, the State mailed information packets to school principals selected through the sampling process. These packets contained information about the survey and its administration, along with a blank class roster for them to complete, and a form asking them to choose a day for survey administration. The project coordinator attempted to maximize response rates by faxing reminders to schools that did not initially respond and then calling schools that did not respond to the reminder.

Principals were asked to administer the survey on Tuesday, Wednesday, or Thursday. Monday and Friday were excluded because anecdotal and some empirical evidence (Bos & Ruitjers, 1992) suggest they are the days with the highest student absence rates. We attempted to minimize the impact of tardiness by administering the survey to second period classes.

On the day of the survey, survey administrators distributed participation assent forms, survey questionnaire booklets, and pencils to the students. Students had one class period (typically 45 minutes) to complete the survey. At the end of the period, students put their survey booklets back into the envelope they came in, and the envelope was sealed and to DATACORP using the provided pre-paid label. Survey respondents did not receive any money or any other form of compensation for their participation.

Passive consent was used to garner parental permission. Parents who did *not* wish their children to participate in the study were required to notify school personnel. Parents received an information sheet that described the rationale for the study, nature of the survey questions, and steps taken to afford respondent confidentiality. This parental consent form emphasized that participation was voluntary and stated that parents could decline to consent. When they did so, teachers asked students to read or work quietly while other students completed the survey.

Prior to beginning the study, students received participation assent forms, which stressed the anonymous, voluntary nature of the survey and outlined the strict confidentiality policy governing the study. Survey administrators, typically classroom teachers, read the assent form aloud while students followed along. There were no unique identifiers at the individual level on the survey itself, and the survey administrators instructed students not to write their names or any other uniquely identifying information on the survey.

Main analyses

Prevalence of ATOD

The Alabama Student Survey Technical Final Report contains tables that present both lifetime and past 30-day use prevalence rates, along with the 95% confidence intervals for each substance. We suppressed prevalence rates when the relative standard error met or exceeded 30%. We also suppressed estimates below 0.005% and above 99.995%. The standard errors (SE) for those prevalence rates that passed these criteria were used to calculate 95% confidence intervals ($95\% \text{ CI} = \pm 1.96 * \text{SE}$).

This study took the conservative route of assuming no significant difference between the prevalence rates if there was overlap between 95% confidence intervals. Within tables, we: 1) cross-tabulated prevalence rates for gender by grade, and 2) displayed prevalence rates for each race category. We graphed findings of particular interest from these tables, and we compared and graphed data across planning regions.

Risk Factor Scale Scores and Scale Prevalence Rates

We used item-level variables to aggregate risk factor scale scores. The Alabama Student Survey Technical Final Report contains the subscale reliability for each scale score, along with its name, whether it is a risk or protective scale, and the number of items composing the scale. We used 0.6 as a minimum reliability criterion and did not use any scales that did not meet this threshold. Only one scale, Individual: Impulsivity, failed to exceed this criterion. Since the Individual: Religiosity scale comprised only one item we did not calculate reliability for it. We also did not compute an Individual: Social Skills score because the items that compose the scale were nominal scales of measurement.

This study generated prevalence rates in order to estimate the proportion of a population “at risk” for each scale. We dichotomized responses for each risk and protective scale using a cutoff point. Individuals above this point were considered “at risk” (for risk factors) or “protected” (for protective factors), while those below/equal to this point were considered “not at risk” or “not protected”.

While there are a variety of methods for determining cutoff points, we chose to construct our cutoff points using signal detection theory. Signal detection theory has been examined extensively in medical decision-making research (e.g., Hauben & Zhou, 2003; Allan & Siegel, 2002; Zweig, 1988; Zweig & Campbell, 1993; Zweig, 1995), but has not yet been applied as a method for estimating prevalence based on risk scales. The advantage of this technique is its utility for selecting scale scores that demonstrate a relationship to the outcomes of interest. This allows for the filtering of useless or irrelevant scale scores that may have little or no relationship to the outcomes, and it can reduce or eliminate the influence of superfluous information.

The concept is relatively straightforward and relies on an outcome or *gold standard* by which we dichotomized and evaluated our scales, in this case substance use. While we could have calculated several useful diagnostic measures from each table (each cutoff

point), we were most interested in sensitivity and specificity. This procedure optimizes both sensitivity (the probability of a true positive) and specificity (the probability of a true negative).

Once we determined the values for each possible cutoff point in a given risk factor scale-outcome combination, we determined an overall measure of the relationship using the ROC (receiver operator characteristic) curve. We created ROC curves by plotting the sensitivity by 1-specificity for each cutoff point. We then used the area under the ROC curve as an estimate of the magnitude of the relationship between the cutoff point for the scale score and the outcome. Values vary between 1.0 (a perfect relationship) and 0.5 (no relationship). We calculated prevalence rates for scale-outcomes only when the area under the ROC curve was 0.7 or greater.

We calculated cutoff points for scale scores that resulted in risk factor prevalence rates in each grade for the following outcome measures:

- Lifetime Alcohol Use
- Lifetime Marijuana Use
- Lifetime Tobacco Use
- Lifetime Inhalant Use
- Lifetime Other Drug Use

We then constructed county level risk and protective factor prevalence rates and created maps that display the rates. We arranged the colors such that geographic patterns of high/low prevalence would be apparent. The interested reader can find the maps in the Alabama Student Survey Technical Final Report.

Antisocial/Delinquent Behaviors

We also constructed tables that summarize the students' self-reported antisocial behaviors. There are eight different antisocial/delinquent behaviors reported in each table. We cross-tabulated the prevalence rates for antisocial and delinquent behavior by gender, grade, and race. We applied the same conservative suppression estimates rules as we did for our substance use rates. Only those prevalence rates with confidence intervals that did not overlap were considered significant.

Prevalence of Need for Prevention Programming

We also estimated the percentage of students in each county who would benefit from science-based programs that we matched to their self-reported prevention needs. We selected prevention programs from the Western Center for Application Technology's (CAPT) list of best practices. The published list is on the Internet (<http://www.unr.edu/westcapt/bestpractices/bestprac.htm>). The Western CAPT defines best practices as those practices and programs identified as research-based by any one of the following agencies:

- The National Institute for Drug Abuse (NIDA)
- The Center for Substance Abuse Prevention (CSAP)

- The National Center for the Advancement of Prevention (NCAP)
- The Office of Juvenile Justice and Delinquency Prevention (OJJDP)
- The Centers for Disease Control and Prevention (CDC)

We reviewed each program on the list to determine whether the program should be included in the analysis. In order to get on our list of programs, the program had to meet three criteria. The first criterion was that it had to address the risk or protective factors with cutoff points in the survey data. The cutoff points were necessary for matching students with programs. The second criterion was that our survey data had to include the program's target population. For example, some programs are only for children under the age of 12. Since there were almost no children under the age of 12 in our survey, a program that serves this population would be inappropriate in our matching algorithm. The third criterion was that the survey data could *identify* the target population. Some programs are appropriate only for students who are members of special populations. For example, Multi-Systemic Therapy, which is on the Western CAPT's list of science-based programs, is intended only for "chronically violent, substance abusing juvenile offenders" (Schinke, Brounstein, and Gardner, 2002). Assuming that all survey respondents were members of this target population would result in an overestimate of the need for this program. Rather than overestimate program need, we excluded programs when the target population was not readily identifiable.²

We assessed each program according to risk and protective factor scales it addressed. We then translated this assessment into a set of binary variables in the database corresponding to each program. We used a set of logical arguments to assign values to the program variable for each individual student, based on which risk and protective factors the program addresses. We gave variables a value of 1 if an individual's risk and protective factor profile indicated that they would benefit from the program, and a 0 if it indicated they would not benefit from the program.

We mapped and reported the data at the county level. Geographic patterns of high/low prevalence should be apparent by the colors in the maps. Prevalence rates were calculated relative to each program's target population. For example, the "Across Ages" program only addresses 6th-8th graders. The reported prevalence rate is the rate within the 6th-8th grade population, and not the entire state youth population.

Key findings of The Alabama Student Survey

Prevalence of Substance Use

Substance use prevalence rates for alcohol, tobacco (cigarettes and chewing tobacco), marijuana, inhalants, LSD/psychedelics, cocaine/crack, and "other drugs" were

² It is interesting to note that this criterion resulted in the exclusion of all programs designated "indicated" using the Institute of Medicine's (1997) classification scheme. It also resulted in the exclusion of two programs designated both selective and indicated (Project SUCCESS and Residential Student Assistance Program). These programs tended to target very high risk youth, often with serious or multiple problems. We excluded no other programs under this criterion.

calculated and analyzed for a variety of categorizations (i.e., grade, gender, race/ethnicity, health planning region) for both lifetime and past month (30-day) use. Some particularly salient findings emerged:

- Prevalence rates were highest for use of alcohol, tobacco (particularly cigarettes), and marijuana.
- Several developmental patterns emerged in the data. Students in the upper grades reported higher substance use rates than students in the lower grades.
- Inhalant use did not follow a developmental trajectory. Use of this substance peaked for middle school-aged students, rather than for high school-aged students.

Prevalence of Antisocial/Delinquent Behaviors

The frequency with which Alabama's adolescents reported committing antisocial/delinquent behaviors was also explored. Prevalence rates obtained from students' self-reports of committing delinquent behaviors in the past year, such as getting suspended from school, getting drunk or high at school, or attacking others with the intention to harm them, were generated for each of the eight categories of such behaviors and were analyzed by various groupings (i.e., grade, gender, race/ethnicity, health planning region). Highlights of the results include:

- Male students were more likely than female students were to report committing delinquent behaviors in every category.
- Several developmental patterns emerged for delinquent behaviors. Students in upper grades reported higher prevalence rates for getting drunk or high at school, and they reported selling drugs more than students reported in lower grades.

Prevalence of Risk and Protective Factors

Prevalence rates of risk and protective factors for substance use were also examined in this study. Risk and protective factor scales were computed and their associations with substance use outcomes were examined. Those risk or protective factor scale/substance use outcome associations that were particularly informative were subjected to further analyses. Cutoff points that dichotomized the scales ("at risk"/"not at risk" or "protected"/"not protected") were established for the informative risk or protective factor scale/substance use outcome combinations so that prevalence rates could be calculated. The prevalence rates of each county were depicted in a series of maps. The results indicated that:

- "Friends' use of drugs," "favorable attitudes toward drug use," "sensation seeking," "engaging in antisocial behavior," "interaction with antisocial peers," "community laws and norms favorable to drug use," and "perceived availability of

drugs and handguns in the community” were risk factors that were particularly informative of certain types of substance use.

- Only the perceived risk of drug use was informative of protection against substance use (and only for the use of marijuana).
- Prevalence rates for risk or protective factor scale/substance use outcomes were higher for alcohol and tobacco than for inhalants, marijuana, or other drugs.

Prevalence of Need for Prevention Programming

Based on the risk and protective factor prevalence data, prevention program recommendations were made for each county. The programs were selected from the CSAP’s list of model programs, effective programs, and best practices. If a student scored above the cutoff point for a particular risk factor scale/substance use outcome combination, the program(s) that addressed the risk factor were recommended for that student. Prevalence rates for each program included in this report reflected the number of respondents in each county whose scale scores indicated need for the program.

- Recommendations for the Leadership and Resiliency Program were particularly prominent.

The Social Indicator Study

Purpose

The second study in Alabama’s family of prevention needs assessment studies, the social indicator study, also collected data on risk and protective factors. In contrast to the student survey, the social indicator data applied to both adults and adolescents in the State and collected data at the county-level. Together, these two studies provide a comprehensive picture of the types of prevention services needed throughout the State.

The social indicator study, in conjunction with the student survey data, measures the prevalence of risk and protective factors at the State, regional, and county-level. Analysis of these prevalence rates will provide information on which areas of the State are most in need of prevention services. The prevalence rates reveal which risk factors to target for reduction and which prevention factors to target for enhancement. Combining this information with data on the demographic and socio-economic characteristics of each county will help the State of Alabama determine which types of prevention programs are most appropriate for each county. Program planners will then be able to combine these insights with their own knowledge about the unique characteristics of their county and make data-driven program planning and funding decisions.

The central purpose of the social indicator study is to assess substance abuse prevention needs across Alabama using reliable and valid county-level social indicator data. The primary objectives of the study were to:

- Investigate whether valid and reliable indices of risk and protection can be created from the social indicator data
- Examine the distribution of risk and protective factors across counties and regions
- Assess which science-based prevention programs suit each county's needs

The social indicator study uses archival data and provides information which in conjunction with data procured from the school survey and community resource assessment studies will allow Alabama officials and prevention program planners to understand the current levels of substance use prevalence, risk and protective indices, and prevention services that are needed or available. In addition to highlighting the current scope of Alabama's substance use issues, the data collected as part of the social indicators study can serve as an evaluative tool to help gauge the successfulness of future prevention efforts.

Target population

This study did not gather information directly from individuals. It consists of archival data (i.e., data collected by other agencies for other purposes). It therefore did not target a population of actual persons. However, the data collected in this study are supplemental data that describe populations that we did not sample in the student survey. The student survey measured only those students enrolled in school who were present the day of the survey. By default, the student survey study does not measure drop outs, arrestees, nor does it measure youth living in any other institutional setting that are not enrolled in mainstream public schools. The social indicator study data enhance the school survey by enabling the State to examine out-of-school populations that may be at great risk for substance abuse problems and also in need of prevention services.

Data collection methods

All data from this study come from secondary sources. Dr. Donald Bogie, Director of the Center for Demographic Research at Auburn University Montgomery, collected the majority of the data through formal requests to the State agencies that own the data sets. Data collection began during the first year of the project and lasted several months, since many indicators were not immediately available. A second wave of data collection was completed during the second year in order to obtain indicators from more recent years. As soon as an indicator was available, we reviewed the data and contacted the publishing agencies regarding any suspicious or missing values. An administrative assistant then entered the data under the supervision of the investigator.

Data Quality Control

We took many steps to ensure data quality. The project manager was responsible for all programming changes made to the data. All changes were documented in a separate data manual. The social indicator data was housed in both Excel and SPSS databases

on a secure server. The server was backed up each night, and the backup tape was housed in a locked safe.

In order to prepare the data for analysis the data was imported into SPSS. The data manager was responsible for all variable name changes and data importing procedures, which were documented in a data manual. All SPSS programs were written and archived so that operations made to the data could be duplicated at a later date. In order to control for differences in population size, rate variables were created. Each rate variable was created by dividing the original variable by the appropriate population and multiplying by 100,000. Corresponding labels were also created to ensure complete understanding of the variable during analyses.

Main analyses

The overarching purpose of the social indicator study was to provide information useful to the State for providing prevention services using valid and reliable data. We conceptualized several research questions centering on a step-by-step, empirical evaluation of the validity of our data and the validity of common theoretical constructs used in conceptualizing, categorizing, and summarizing the data. Once these questions were answered, we used the most parsimonious and valid methods to evaluate risk and protection.

Research question 1: How reliable are the indicators?

We assessed reliability using the most recent three years up to and including the year 2000. The years 1998-2000 were used for the majority of the indicators. Indicator reliabilities were assessed using two different methods: 1) Cronbach's Alpha (standardized) and 2) an estimate of reliability using the laws of path analysis described in detail by Heise (1969).

Research question 2: Is it possible to construct valid indices measuring risk and protection for each of the risk and protective factors in the CSAP model of risk and protection?

In order to combine individual indicators into valid indices of risk and protection, the indices must demonstrate convergent and divergent validity (Campbell and Fiske, 1959). We used a Modified Multitrait-Multimethod Matrix to assess convergent and divergent validity in this model. In the matrix, indicator reliabilities over time had to be higher than all correlations between indicator pairs and indicators within the same factor had to correlate with each other more than they correlated with indicators outside of the factor. Violations of these criteria would indicate that the model grouped indicators that were less related to each other than they were to other variables. These violations would mean that indices were not valid.

Research question 3: Is it possible to construct valid indices measuring risk and protection for each of the four domains in the CSAP model of risk and protection?

States in the CSAP Prevention Needs Assessment Program typically categorize risk and protective factors into four domains: family, peer/individual, community, and school.

We investigated the validity of indices created by combining indicators from each domain. First, we assigned a domain to each indicator. We then tested for validity using the methods employed in answering question 2. For this research question, the criterion was that indicators within the same *domain* had to correlate with each other more than they correlated with indicators outside their domain. The implications discussed in the previous section on question two apply to violations of these criteria.

Research question 4: Is it possible to construct valid indices measuring overall risk and overall protection?

The method for creating indices was contingent upon the results of research question 3. If the Modified Multitrait-Multimethod Matrix supported the use of domains by demonstrating convergent and divergent validity between them, domain indices would first be created, and a linear combination of the domain indices would be used to construct overall indices of risk and protection. In this way, each domain would be weighted equally in the summary index rather than each indicator.

As discussed in the key findings section, the Modified Multitrait-Multimethod Matrix did not support the use of domains. In light of this finding, we conducted an exploratory factor analysis. The analysis revealed stable factors. We then tested these indices for predictive validity by regressing them to the prevalence rates among youth of risk gathered from the Alabama Student Survey on Risk and Protective Factors (Alabama Department of Mental Health and Mental Retardation Substance Abuse Services Division, 2003). The average number of risk scales for which youth were “at risk” was aggregated by county separately for both 6th and 10th graders. Regression models used the extracted risk factor scores, a protection indicator, and the interaction of the risk factor and protection scores to predict 6th and 10th graders’ risk levels. Two separate pairs of regressions were conducted, for a total of four regressions. The pairs were composed of two regressions, one including the youth group rate as the protective indicator and the other including the churches rate as the protective indicator. One pair of regressions was conducted for each grade (6th and 10th).

Research question 5: What is the geographic distribution of social indicators in Alabama?

We used two techniques to examine the geographic distribution of risk and protective factors. First, we ranked counties on each reliable indicator. Tables with the county rankings appear in Appendix C of the social indicator report. Since we were unable to validate the CSAP classification of risk factors, the tables are organized by the type of data. The data types are:

- Availability of Substances
- Drug and Alcohol Use in the Community
- Education
- Family Characteristics
- Socio-Economic Characteristics
- Crime
- Voting

- Protective Factors

Rankings tables, while useful for comparing counties, do not provide insight on the geographic patterns in the data. Maps, however, provide an excellent visual representation of geographic patterns. For this study we mapped each reliable indicator (see Appendix D in the social indicator report). The mapping software divided the data for each indicator into five categories with equal ranges. Each category was assigned a shade, with darker shades representing higher rates. Counties that are in metropolitan statistical areas have thicker borders than counties in non-metropolitan statistical areas in order to highlight any possible effect of urbanicity.

Research question 6: Which science-based prevention programs are recommended based on the social indicator data?

Using information on need gleaned from the social indicator data, we developed tables to recommend science-based programs. Prevention programs were selected from the Western Center for Application Technology's (CAPT) list of best practices. To match social indicators with the most appropriate programs, we reviewed a brief description of each program. We deemed a program to match a particular social indicator if it met one of two criteria. The first criterion was that the program was shown to reduce the behaviors reflected by the indicator. The second criterion was that the program was designed for or adapted to the specific needs of the target population associated with the indicator.

To help planners prioritize indicators and programs, we created a table showing the three most "problematic" indicators for each county. We computed standardized scores (z-scores) for each social indicator with at least one matching program. The three social indicators with the most extreme z-scores were labeled as the most problematic. These indicators are displayed in the table along with the programs recommended for each indicator. Planners can use Table 5, which appears in the results section of the social indicator report to set priorities for specific science-based programs.

Key findings of the Alabama Social Indicator Study

Indicator Reliability

Exactly 22 of the indicators tested for reliability exceeded the minimum criteria for both Cronbach's standardized alpha and Heise's estimate of temporal reliability. Ten indicators did not meet either one or both criteria. Homicide rates failed to pass the criterion for Cronbach's Alpha. Juvenile arrest rates for violent crimes, juvenile birth rates, event drop out rates, and rates of drop-outs prior to ninth grade failed to pass the criterion for Heise's method. Arrest rates among youth aged 10 to 14 for vandalism and arrest rates among youth aged 10 to 14 for alcohol-related offenses also failed to pass Heise's criterion. Juvenile suicide rates, alcohol-related traffic fatality rates, and rates of pregnant women in substance abuse treatment rates failed both tests of reliability.

Risk Factor Indices

The standardized Cronbach's Alphas were used as the estimates of reliability for indicators that were compared to the inter-item correlations. A total of only 3 of the possible 713 comparisons (22 indicators with reliability estimates x 31 inter-item correlations between those indicators and all other indicators), or 0.4% represented violations of the assumption that reliabilities would be higher than inter-item correlations. This represented an acceptable rate of violation, allowing us to continue to test the factors' convergent and discriminant validity. The test of convergent and divergent validity revealed that more than 20% of the inter-factor and intra-factor correlation comparisons violated the assumptions required for validation. As a result, the construction of factor summary measures following this structure was not appropriate.

Domain Indices

A total of 42.5% of the inter-domain and intra-domain correlation comparisons violated the assumptions necessary to validate this model. Thus, there is little evidence to suggest validity among the domains. As a result, the construction of domain summary measures following this structure was not appropriate.

Risk and Protection Indices

We attempted to create indices of overall risk and protection using factor analysis, which combines groups of variables into a number of factors based on their correlations with one another. We created three indices of risk using a three-factor model with Varimax rotation. We then attempted to verify these indices of risk by regressing them, along with two of our indicators of protection, against measures of risk derived from the student survey data. None of the regression models were significant. We concluded that none of the extracted risk factors, protective indicators, or their interactions had predictive validity in terms of youth risk for substance use.

Geographic Distribution of Risk and Protective Factors

We ranked counties on each indicator. Tables with the county rankings appear in Appendix C of the social indicator report and in a recently published chart book (see Appendix E of the social indicator chart book). The tables are organized by the type of data.

We mapped each reliable indicator. The maps appear in Appendix D of the social indicator report. The mapping software divided the data for each indicator into 5 categories with equal ranges. Each category was assigned a shade, with darker shades representing higher rates. To capture the effect of urbanicity, counties that are in metropolitan statistical areas have thicker borders than counties in non-metropolitan statistical areas.

Inspection of the maps reveals that the indicators did not all follow the same geographic pattern. Some indicators appear to follow a north-south pattern, while others follow an east-west pattern. Other indicators have no discernable directional pattern. To explain the variation in patterns, we compared these indicators to measures of race, median income, urbanicity, and whether alcohol could be sold in the county. The findings for

each indicator are summarized in the paragraphs below. The indicators are organized by data type.

Substance Availability

The counties with the most *Alcohol Sales Permits* per 100,000 people were predominately in the southern half of the State, and those with the least were mainly in the northern half of the State.

Counties with the highest rate of *Tobacco Sales Permits* were generally located in the southern area of the State. Six of the counties with the lowest rates of permits were metropolitan statistical areas, while the other four border metropolitan statistical areas.

Eight counties were ranked among the highest ten in both Alcohol Sales Permits and Tobacco Sales Permits.

Drug and Alcohol Use in the Community

Nine of the highest counties on *Adult Alcohol-Related Arrest* rates (Marshall, Colbert, Jackson, Limestone, Morgan, Franklin, Walker, Marion, and Randolph) were actually either dry counties without wet municipalities or scored among the ten lowest in Alcohol Sales Permits. Similarly, Choctaw, Greene, Perry, and Wilcox counties all were in the ten highest for Alcohol Sales Permits, but were in the ten lowest in terms of Adult Alcohol Related Arrests. These results suggest that more than the simple availability of alcohol is contributing to Adult Alcohol-Related Arrests.

Rates for *Adult Drug-Related Arrests* appeared to be highest in Houston and in several counties north of Houston.

Rates of *Adult Drunk Driving Arrests* appeared to be lower in dry counties, although there were exceptions. Most of the counties with the lowest rates were located in the western portion of the State.

The counties with the highest rates of *Adults in Substance Abuse Treatment* generally corresponded to those counties that had substance treatment facilities.

Metropolitan statistical areas (MSA) generally had higher rates of *Juvenile Alcohol-Related Arrests*, although there were exceptions. Counties with higher proportions of minorities had lower rates, including those that were in metropolitan statistical areas.

Metropolitan statistical areas consistently had the highest rates for *Juvenile Drug-Related Arrests* with one exception, Shelby County. Shelby County differs most dramatically from other counties in terms of income, having the highest median income. In addition, dry counties generally had the lowest rates.

Education

Seven of the ten counties with the highest rates of *Adolescents Without a High School Diploma* were in the northern part of the State, while counties with the lowest dropout rates were scattered throughout Alabama.

Metropolitan statistical areas had the lowest rates of *Adults Without High School Diplomas*.

Family Characteristics

Adolescent Pregnancy rates were higher in southern parts of the State and lower in metropolitan statistical areas, except for Montgomery.

Rates of *Children in Foster Care* did not appear to follow any geographic pattern.

The rate of *Children Living Away from Parents* most closely followed the racial profile of the county. Counties with high proportions of minorities generally had higher rates. None of the counties with the top ten highest rates were metropolitan statistical areas (MSAs), while five of the ten lowest were MSAs.

Divorce rates tended to be higher in MSAs and across the north and southeast. Counties with larger proportions of minorities tended to have lower Divorce rates, while lower income counties with lower proportions of minorities had higher rates of Divorce.

Metropolitan statistical areas tended to have lower rates of *Single-Parent Households*, with the exception of Jefferson and Montgomery.

Socio-Economic Characteristics

The rate of *Food Stamp Recipients* generally followed the median income for the county.

Like Food Stamps, the rate of *Free and Reduced Price Lunches* appeared to follow income. That is, counties with higher median incomes had lower rates. A notable exception to this pattern is the observation that counties with lower median incomes that had lower proportions of minorities also evinced lower rates of Free and Reduced Price Lunches.

The trend in *Migration into the County* is for people to migrate out of counties with large cities and into the surrounding area. This effect is most pronounced in Jefferson County.

New Home Construction rates were highest in metropolitan statistical areas, but not necessarily for those that had the highest rates of Migration into the County. It appears that New Home Construction is most closely tied to high median incomes.

The rate of *Renting Households* was most closely tied to the location of metropolitan statistical areas, in particular those with large cities.

Participation in the *Temporary Assistance for Needy Families* program tended to be higher in the southern parts of the State, with Baldwin County as a notable exception.

Unemployment rates were lowest in metropolitan statistical areas and highest in lower income counties with higher proportions of minorities. Lower income counties with high proportions of minorities had higher Unemployment rates than lower income counties with low proportions of minorities.

Crime

Arrests for Family Offenses did not appear to have any discernable geographic pattern.

Prisoner rates do not seem to vary by median income, race, geographic location, wet/dry or metropolitan statistical area status. They also were not well predicted by having correctional facilities or work release programs in the county.

Adult Property Crime Arrest rates were highest in metropolitan statistical areas and lowest in dry, non-metropolitan counties.

Adult Violent Crime Arrest rates were lower in the northern dry counties and higher in lower income counties with a high proportion of minorities.

Juvenile Curfew, Vandalism, and Disorderly Arrests rates were highest in the metropolitan statistical areas and lowest in dry counties.

Rates for Juvenile Property Crime Arrests were highest in metropolitan statistical areas and lowest in the northern dry counties.

Rates of *Property Crime Arrests for Juveniles Aged 10 to 14* followed a geographic pattern similar to that of Juvenile Property Crime Arrests. The rates were highest in metropolitan statistical areas and lowest in the northern dry counties.

Voting

The rate of *Voters* was highest in the southwest and lowest along the eastern border.

Protective Factors

Church Organizations were mostly densely distributed across the southern part of the State.

Youth Organizations were most densely distributed in the south, although this effect was less strong than with Church Organizations.

Recommended Programs

Certain science-based programs were recommended more frequently throughout the State than others. The Nurturing Program and the Quantum Opportunities Program were recommended for 81% of Alabama's counties. Project PATHE and Project STATUS were the second most popular programs and were recommended for 57% of the State's counties. Their frequent recommendation due to the fact that these two programs matched a number of indicators related to dropping out and delinquency.

Two programs were recommended in 40% to 45% of Alabama's counties. Both programs address underage and adult drinking. Challenging College Alcohol Abuse was recommended in 45% of Alabama's counties, although it may be appropriate only for counties with colleges or universities. The Community Trials Intervention to Reduce High-Risk Drinking was recommended in 40% of the counties. These results point to the need to address drinking problems in many of Alabama's counties.

Ten programs appear on the list of recommended programs in 30% to 39% of Alabama's counties. Seven of these programs aim to decrease juvenile delinquency and problem behaviors. The seven programs are: Functional Family Therapy, Positive Action, Parents Who Care, Project SUCCESS, Early Risers, the Adolescent Transitions Program, and Brief Strategic Family Therapy. With the exception of Brief Strategic Family Therapy, which is designed only for African-American and Hispanic youth, these programs are appropriate for many different target populations.

Three of the ten programs recommended in 30% to 39% of the counties do not adhere to one theme. Brief Alcohol Screening and Intervention for College Students was recommended for 36% of the counties, although it may not be appropriate for counties with no colleges or universities. Raising a Thinking Child, designed for low income mothers, was also recommended for 36% of the counties. Finally, Protecting You/Protecting Me was recommended 33% of the time. This program helps youth avoid riding with a drinking driver.

A variety of programs were recommended for 20% to 29% of the counties. The Nurse-Family Partnership, a program for low income and first time mothers, was recommended in 28% of the counties. Cognitive Behavioral Therapy for Child and Adolescent Traumatic Stress was recommended in 25% of the counties. This program works with victims of crime and abuse, as well as people exposed to high amounts of crime in their neighborhood.

Two school-based programs were recommended for 25% of the counties. The first program, Olweus Bullying Prevention not only prevents bullying in school but also reduces incidences of anti-social behavior such as fighting, theft, and truancy. The second program, Project CARE, successfully reduces delinquency through a school reorganization model.

Two additional programs were recommended in 22% of the counties. The Leadership and Resiliency Program and Reconnecting Youth Program both focus on dropout

prevention. Their frequent recommendation reflects the fact that dropping out is a widespread problem in many of Alabama's counties.

Another cluster of programs was recommended in 15% to 20% of Alabama's counties. All ten programs in this cluster were parenting skills programs. Five of these programs were recommended in 18% of the counties. The programs were: Any Baby Can, Meld for African-American Young Mothers, Meld for Growing Families, Meld for Young Dads, and Meld for Young Moms. These programs are intended primarily for teenage parents and were recommended for counties where adolescent pregnancies were among the three most problematic indicators.

Multidimensional Treatment for Foster Care, a program with a prevention module for foster care parents, was recommended for areas with relatively high numbers of children in foster care, amounting to 16% of the counties in the State. The Parenting Skills Program also has a module for foster care and adoptive parents and was recommended for the same counties.

Healthy Families America, Helping the Noncompliant Child, and Parents as Teachers were recommended for counties with high rates of arrests for family offenses. These three parenting skills programs aim to reduce child neglect and abuse. They appear on the list of recommended programs in 15% of the counties.

The final ten programs were recommended in less than 15% of Alabama's counties. Athletes Training and Learning to Avoid Steroids was recommended for approximately 13% of Alabama's counties, where juvenile alcohol-related arrests were problematic. Retailer Directed Interventions was the next most popular program in this cluster. We recommended this program for counties where tobacco sales outlets was one of the three most problematic indicators – approximately 9% of the counties. Similarly, alcohol sales permits were among the three most problematic indicators in 7% of the State's counties. We recommended Communities Mobilizing for Change on Alcohol for these counties.

Six of the final ten programs were recommended in only 7% of the counties. The programs were: Al's Pals, CICC's Effective Black Parenting Program, Family Effectiveness Training, Incredible Years, Promoting Alternative THinking Strategies, Parenting Wisely, and the Seattle Social Development Project. These programs target problem behavior and were recommended for juvenile arrests for curfew, vandalism, and disorderly conduct.

Conclusions and recommendations

Reliability

We assessed the inter-temporal reliability of 32 of the 42 indicators collected. The remaining ten indicators did not have multiple years of data and hence, their inter-temporal reliability could not be determined. Of the 32 indicators tested, 22 met the minimum criteria for both Cronbach's standardized alpha and Heise's estimate of temporal reliability. The unreliable indicators are listed on the following page.

- Homicide rates
- Juvenile arrest rates for violent crimes
- Juvenile birth rates
- Event drop out rates
- Rates of drop-outs prior to ninth grade
- Arrest rates among youth aged 10 to 14 for vandalism
- Arrest rates among youth aged 10 to 14 for alcohol-related offenses
- Juvenile suicide rates
- Alcohol-related traffic fatality rates
- Pregnant women in substance abuse treatment rates

We recommend the State not use the unreliable indicators for prevention planning, since the data do not appear to be stable over time. In the future, the State may collect additional years of data in order to update the results from this study. Each time the State obtains new data, tests for inter-temporal reliability should be performed. It is possible that some indicators that were not stable during the time period for this study (1998-2000) will be stable in the future and vice versa.

Risk Factor Indices

We tested whether the social indicators could be combined into valid indices of the risk factors in CSAP's model. Validity testing entailed constructing a Modified Multitrait-Multimethod Matrix. If validity were present, the matrix would show that indicators within the same risk factor correlate better with each other than indicators from different risk factors. This relationship *was not* observed in Alabama's data, leading us to conclude that risk factor indices are not likely to be valid with the data gathered for this study. In light of this finding, we recommend against creating indices of the CSAP risk factors, at least in Alabama.

Domain Indices

Risk and protective factors are typically classified into one of four domains: peer/individual, school, family, and community. We tested the feasibility of combining the social indicators into indices based on these domains. A Modified Multitrait-Multimethod Matrix was used to test the validity of the domains. If the domains were valid, indicators within each domain would correlate more highly with each other than with indicators in other domains. The matrix showed that this condition also *was not* present in Alabama's data. We therefore conclude that indices based on domains are likely invalid and recommend against their creation and use in Alabama.

Risk and Protection Indices

We created indices of overall risk using factor analysis. This method analyzes correlations in the data and combines highly correlated indicators into indices. After creating the indices, we attempted to validate them against data on risk from the Alabama Student Survey of Risk and Protective Factors. Regression analyses demonstrated that the indices had no significant relationship with the survey data. Thus, we could find no evidence that the indices are valid measures of overall risk and

protection. Consequently, we recommend that planners examine each indicator individually rather than consider index scores.

Social Indicator Utility

Although social indicators in Alabama cannot be combined into useful indices, they are still *extremely* informative when examined individually. Social indicators provide data on the location of high risk populations in the State. Many of these populations, such as dropouts and prisoners, were not sampled by the student survey. Hence, the social indicators study is the *only* source of information on these populations. In addition, social indicators provide information on phenomena related to substance use and misuse, such as drinking and driving arrests, drug-related arrests, and arrests for juvenile delinquency. In light of these facts, our recommendation is that planners examine social indicators on an individual basis, using the data in conjunction with their knowledge of the counties and communities they serve.

Geographic Distribution Of Indicators

Mapping and ranking individual social indicators revealed that each indicator had a unique geographic pattern. Overall, regional differences within the State were apparent on many indicators. Most often, these differences were seen between the north and south, with the south tending to experience higher rates on many of the indicators. Counties containing large cities or counties surrounding large cities often differed from those in rural areas, although neither urban nor rural areas appeared more problematic overall. Several indicators seemed to divide along the racial make-up of the counties. Areas with more minorities tended to have higher rates on these indicators, although there were exceptions. Finally, dry counties tended to experience lower rates on many indicators.

Recommended Science-Based Prevention Programs

We developed a set of program recommendations based on the three most problematic social indicators in each county. The problematic indicators and associated program recommendations appear in Table 5 of the social indicator report. As shown in the table, we recommended a variety of programs for each county, allowing planners to choose programs most suitable to the characteristics and needs of the local population. We recommend planners review Table 5 in the social indicator report and select a subset of programs of interest. Planners can then research each program in their subset to determine the most appropriate programs for their area.

Each county had a distinctive profile of problematic indicators and recommended programs. Nevertheless, some Statewide trends were apparent. The Nurturing Program and the Quantum Opportunities Program were recommended in 81% of Alabama's counties, since they were recommended for a variety of social indicators. State planners may wish to consider implementing these programs on a Statewide basis.

Project PATHE and Project STATUS were the second most frequently recommended programs. They appear on the list of recommended programs in 57% of the State's counties. Their frequent recommendation may point to the need for programs that focus

on school climate rather than on individual risk and protective factors. We recommend local planners give these programs, particularly Project PATHE, serious consideration. Planners could establish provider workgroups to work with the original program developers on implementing these programs in their area.

Challenging College Alcohol Abuse was the third most commonly recommended program. It was recommended in 45% of Alabama's counties, although it may be appropriate only for counties with colleges or universities. The Community Trials Intervention to Reduce High-Risk Drinking was recommended in 40% of the counties and is also appropriate for the general population. These programs highlight the need to reduce high risk drinking behavior in many of Alabama's counties, particularly through environmental and community-based strategies. Planners in counties with high rates of alcohol-related arrests should implement these or similar science-based programs if they have not done so already.

Programs focusing on individual risk and protective factors also have an important role in many counties. For example, seven programs that aim to decrease juvenile delinquency and problem behaviors were recommended in 30% to 39% of Alabama's counties. The programs were: Functional Family Therapy, Positive Action, Parents Who Care, Project SUCCESS, Early Risers, the Adolescent Transitions Program, and Brief Strategic Family Therapy. Planners seeking to reduce juvenile delinquency should carefully review each program to determine the best package for the local target population.

Three other programs focusing on individual risk and protective factors were recommended in approximately 35% of the counties. Brief Alcohol Screening and Intervention for College Students was recommended for 36% of the counties, although it may be appropriate only in areas with colleges or universities. Protecting You/Protecting Me helps youth avoid riding with a drinking driver and was recommended in 33% of the counties. These two programs illustrate the need to address drinking issues using individual-level strategies in approximately one-third of Alabama's counties.

The third program in this group was Raising a Thinking Child, which was recommended for 36% of the counties. This program was originally designed for low income, African-American mothers. Since poverty is a problem in many areas in Alabama, programs designed for low income families are particularly important.

A variety of programs were recommended for less than 30% of Alabama's counties. While these programs may not be important for the State overall, they can play a critical role in meeting prevention need at the local level. We recommend that local planners review the specific program recommendations for their county in Table 5, thereby ensuring that these important programs are not overlooked.

Summary

This report presents social indicator data gathered from a variety of sources. We collected data on 42 indicators and examined their inter-temporal reliability. The indicators demonstrated good reliability. Of the 32 indicators tested, 22 were reliable. Although subsequent tests showed that the indicators could not be combined into validated indices, analyses of individual indicators generated several useful products. Tables with county rankings on each reliable indicator show planners where each county ranks in relation to other counties in the State on each indicator, while maps provide a visual impression of the data. The maps will allow planners to easily compare their county with surrounding counties and to examine geographic patterns in the data. In addition, this report presents a table with the science-based programs recommended for each county. Local planners can review the programs selected for their county and select the most appropriate program for their area. These products, along with the additional information presented on this study, make this Technical Final Report a rich resource for State and local planners alike.

The Community Resource Assessment

Purpose

The primary objective of the community resource assessment (CRA) was to inventory and assess existing prevention resources among providers who receive SASD funding. This study assessed whether the current system can meet the State's strategic goals for prevention and it identified areas where the system could be enhanced. The data from this study, in conjunction with data from other studies in Alabama's prevention needs assessment project, will allow us to examine the match between current prevention programs and identified prevention needs. We designed the study to answer the following key research questions:

- What prevention services are available in the State?
- Have the State's goals for prevention service delivery been met?
- What are the strengths and weaknesses of the Statewide prevention system?
- What are common barriers to providing services?

Target population

A major objective of this study was to analyze thoroughly the use of SASD funds. In keeping with this objective, the respondent universe consisted of all programs funded by the SASD during the fiscal year 2000. During 2000, the SASD funded programs through three funding streams. The first funding stream is the Substance Abuse Prevention and Treatment (SAPT) Block Grant, a grant from the Federal government. The second and third funding streams use State funds. They are the Governor's High-Risk Youth Grant (henceforth referred to as the Governor's Grant) and the Drug Abuse Resistance Education (DARE) program.

Although the universe includes recipients from only three funding streams, it consists of a diverse set of agencies. The Block Grant program primarily funds community mental health centers, while the Governor's Grant program awards funds to a variety of agencies, including Boys and Girls Clubs, housing authorities, community coalitions, and schools. The DARE program primarily funds community police forces.

This study is the first thorough assessment of the services provided through the SASD's three funding sources, the Block Grant, Governor's Grant, and DARE programs. For this study, the SASD conducted a census of all programs. The rationale for conducting a census was to furnish the SASD with complete information on its prevention system. This information will help the SASD better understand how its funds are used.

Table 2 below shows the calculations of the final size of the census. The calculations are broken down by funding stream. The second and third rows of the table show the number of providers and programs for Governor's Grant and DARE funds. In these rows, the number of programs equals the number of providers. This equality results from our decision to consider the Governor's Grant and the DARE grants as one program each. The first row displays data for Block Grant funds. In this row, the number of programs is greater than the number of providers because we defined each objective funded by the SASD as one program (see full report for the details related to this issue). The SASD funded 137 objectives among the 33 providers.

The final row of the table contains the total number of providers and programs. The total number of providers is less than the column total because eight providers received both Governor's Grant and Block Grant funds. The unduplicated number of providers selected for participation in this study is 188. The total number of programs is simply the sum of the previous three rows. Since the SASD intended to survey all programs, this number is also the size of the sample. Thus, the size of the sample is 300 programs.

Table 2. Sample Size by Funding Stream for the Community Resource Assessment

Funding Stream	Number of Providers	Number of Programs
Block Grant	33	137
Governor's Grant	119	119
DARE	44	44
Total	188	300

Data collection methods

The primary mode of data collection was the Web-based survey. Some participants did not have Web access, and a few participants experienced technical difficulty when attempting to access the survey. The research coordinator advised these participants to complete and submit the worksheets included in the survey launch packet. A copy of the worksheet appears in Appendix F of the final report. The worksheet contains the same items as the Web survey and is very similar in format. In addition, a few providers

completed CSAP's paper version of the questionnaire, which contains the same core items and wording as the main survey.

Of the 195 questionnaires that we received, 44 were completed on paper. These 44 surveys were submitted by 29 providers. In other words, out of 102 providers completing the survey, approximately 73% of participants completed the questionnaire using the Internet.

We examined the data for differences between providers who completed on paper and providers who completed the survey over the Internet. We found no evidence of statistically significant differences between these two types of respondents. We also tested for differences between Block Grant providers and others and agency size (as defined by their budgets). We found no statistically significant differences on these variables. We also considered the possibility of mode effects (Internet versus paper and pencil) and reviewed the literature on this topic. The articles we reviewed reported that the differences in the patterns of responses found in Internet and paper surveys ranged from small to non-existent (Carini et al., 2003; Fouladi, McCarthy & Moller, 2002; Matz, 1999; McCabe et al., 2002; Saphore, 1999). Hence, we can be confident that the surveys submitted on paper can be safely analyzed along with the surveys submitted over the Web.

Main analyses

The primary aim of this study was to thoroughly assess the SASD's current prevention system and make recommendations for enhancement. We formulated seven research questions related to this aim and used the best available methodology to answer each one. The questions and analytic methods used to answer them follow.

Question 1: What types of prevention services are available?

Name of Program

The first analysis was a simple frequency analysis of program names. The goal of this analysis was to determine which programs were popular in the State. Once identified, we created "top ten" lists showing the most popular programs in the State and broke them out by Block Grant, Governor's Grant, and DARE funds.

Type of Service

The top ten lists show programs that are popular but do not give insight into what services are provided. Our second analysis showed which services the programs provide. We then took this information and prepared cross tabulations of service type by region so we not only which services are popular but also see how they are distributed throughout the State. The CRA instrument collects data on four service categories: youth (individual/peer), family, school, and community. Our cross tabulations show the percent of programs in each region who reported delivering services in each of the four categories.

Primary Service

Since most programs offer multiple services, we also ran analyses to show the primary service each program offered. Bar graphs for each funding stream show the frequency of each primary service. We also examined these results by region.

Question 2: What goals do programs target?

The questionnaire asks respondents to report which goals their program addresses. Respondents indicate whether each goal is a “main focus”, “not a main focus but addressed”, or “not addressed”. For each goal, we calculated the percentage of programs reporting that the goal was a major focus. We performed separate calculations for each funding stream.

Question 3: How many people do the programs serve?

The number of participants varies by program. Therefore, we created a table with several statistics that describe this variation. We looked at the minimum, maximum, and median observation for each funding stream and noted observations that mark the 25th and 50th percentiles.

Question 4: What populations do the programs serve?

Special Populations

The CRA questionnaire contains a checklist of 38 populations that programs can serve. Respondents select each population on the list that they consider a primary population. The last item on the checklist allows respondents to specify other populations not mentioned in the previous items. We conducted a frequency analysis to assess which populations were the most and least served.

Gender

We analyzed the gender composition of the State’s programs using bar charts. There are five bars in each chart: (1) males only (99% male), (2) a corresponding bar for females only, (3) mostly male (programs where the male range is from 75% to 99%) (4) a corresponding bar for mostly female and (5) the last slice, labeled “mixed,” applies to all other programs. We also created bar charts with the same format for the data in each region.

Ages

The CRA report presents data on the age groups served by programs. The age data were analyzed by age group, and then by the percentage of programs in each funding stream with participants in the age group.

Ethnicity

The final CRA report describes the percentage of programs serving various ethnic groups. These percentages were calculated using data on the percent of program participants from each ethnic group. Thus, the data represent the ethnic groups *participating* in the program rather than the ethnic groups *targeted* by the program. A program may *target* all ethnic groups but may not *serve* all ethnic groups due to a variety of factors such as lack of public awareness of the program, cultural barriers, or an absence of members of the ethnic group in the community.

Question 5: Has the State met its strategic goals for prevention service delivery?

In the Alabama SAPT Block Grant application, the State set four goals for the use of funds in the fiscal year 2000. The first goal was to fund a minimum of ten family strengthening programs in each of Alabama's four health-planning regions. The second goal was to sponsor a minimum of twenty high-risk adolescent education programs. High-risk adolescents are also a focus of the third goal, which was to fund a minimum of ten alternative programs for high-risk adolescents in every region. Finally, the fourth goal was to deliver the full continuum of prevention services in each region.

The purpose of this analysis was to determine whether the services delivered by local providers met these goals. For each goal, we created a table displaying the number of programs by service type and region. These tables illustrate whether the goal was met and allow the reader to discern which services contribute the most to meeting the goal. Only programs funded by the Block Grant are included in the tables because the goals pertain only to Block Grant funding.

Question 6: How can the State improve the delivery of prevention services at the regional and state level?

The CRA data can shed light on three topics related to the delivery system: best practices, barriers, and collaboration. Following best practices helps providers ensure that their services are effective, and the State is interested in knowing which best practices are widely diffused. Our analysis of best practices will help the State answer this question, allowing the State to focus on fostering best practices that are not widely used. The State can play an important role in helping providers overcome barriers to implementing best practices and providing quality services. The barrier analysis ascertains which barriers are most problematic. Finally, collaboration among providers can hasten the process of implementing best practices and overcoming barriers. The SASD can promote collaboration through its regional and Statewide meetings. The collaboration analysis will shed light on the best opportunities for collaboration in the State.

Best Practices

The CRA questionnaire asked several questions related to best practices. We reviewed the instrument and established a set of criteria that determine whether each practice is in place. The practices, items, and criteria are presented in Appendix K of the full CRA

report. After establishing our criteria, we calculated the percent of programs following each practice. The results were analyzed by region and funding stream.

Barriers

The CRA contains 17 items on various barriers, including a question that allows respondents to name barriers not included in the other questions. We analyzed the results at the State level for each barrier question, and we prepared separate frequency graphs for each funding stream.

In addition to analyzing specific barriers, we investigated whether some regions experience more barriers in general. We created a variable equal to the average number of barriers reported in the region.³

Key findings of the Community Resource Assessment Survey

As we have described throughout this report, the study results were analyzed by funding stream. For the sake of brevity we present only the Block Grant results in this report. For the interested reader, results for all three funding streams are presented in detail in the full CRA report. The results presented in this section of the report are presented by each research question.

Question 1: What types of prevention services are available?

Program Name

The data on program names were not very informative. Most Block Grant programs were not named after a specific project or curriculum. Among Block Grant programs with a specific project or curriculum name, only one name occurred more than once.

The State may wish to consider transforming this item into a series of questions in future studies. The first question should ask for the name that the respondent's agency uses to refer to the program, while follow-up questions would determine the name of the curriculum upon which the program is based. These questions would allow the State to more easily determine which programs are delivering standardized curricula.

Services Provided

Block Grant programs provide a variety of services throughout the State. The most popular service is life skills/social skills training for youth, which is offered by almost 80% of the programs. Approximately 60% of programs provide information dissemination, making it the second most popular service. Parent/family management training is the third most popular service but is offered by a smaller percentage of programs, only 30%.

³ We created this variable by dichotomizing each barrier question. Responses of "minor", "moderate", and "significant" were coded as 1, while responses of "not a barrier" were coded as 0. We then summed these dichotomized items for each program. The regional average of this number is the average number of barriers for programs in the region.

Life skills/social skills training for youth and information dissemination are widely offered. Since these services are so widely offered, we recommend that planners at both the State and local levels coordinate services to ensure that services do not overlap. The resources freed could then be applied to services that are still needed or to target populations that are underserved.

Life skills/social skills training, information dissemination and parenting/family management are mainstays of prevention, and it is not surprising to find them among the most common services. However, there are a number of other prevention services that providers should consider. A major recommendation is that Block Grant providers engage in activities that focus on community change. Services such as community mobilization, community capacity building, and working to develop and enforce effective laws and policies are of critical importance. These services can increase public awareness, mobilize the local community, and make the community environment less conducive to substance use.

Another recommendation is that Block Grant providers consider programs focused on school organization. There are several science-based programs that reduce both substance use and anti-social behavior, such as the Olweus Bullying Prevention program. These programs could be especially valuable additions to the continuum of services in areas where the more typical prevention programs based on classroom instruction are already in place.

A final recommendation concerns the CRA questionnaire itself. Since life skills/social skills training is such a popular category, the State may wish to add a question to determine which life skill or social skill the program strives to teach. This question may help planners to uncover additional gaps and redundancies in services.

Question 2: What goals do programs target?

The most popular goal among Block Grant programs was to improve social skills. At the State level, 78% of Block Grant programs focused on this goal. Strengthening perceptions about the harmful effects of ATOD use and strengthening attitudes against ATOD use were the next two most popular goals. Approximately 74% of programs worked to strengthen perceptions, while 73% reported focusing on strengthening attitudes. Preventing or delaying the first use of ATOD was also a common goal, with 65% of programs focusing on it. Improving anti-social behavior was also a common objective. Approximately 60% of programs seek to prevent anti-social behavior, while 59% seek to strengthen attitudes against anti-social behavior.

The goals most frequently endorsed by providers are key elements of most substance abuse prevention programs, and their popularity is therefore appropriate. However, results from the Alabama Student Survey suggest there are two additional goals that Block Grant programs should target. The student survey found that perceived access to substances and community laws and norms favorable to use were strong predictors of youth substance use. However, few programs reported focusing on goals that address these issues, such as reducing youth access to substances; developing community

laws that restrict substance use; working towards clear policies regarding substance use; and strengthening community norms, laws, and attitudes against ATOD use. We strongly recommend Block Grant providers increase the number of activities related to these goals. Collaborating with community coalitions and other community organizations is one of the best methods of addressing these community-oriented goals.

Question 3: How many people do the programs serve?

Program sizes among Block Grant providers vary markedly. At the State level, the smallest program reports serving 15 participants, while the largest program reports 16,660 participants served. The median program size can provide a sense of the number of large and small programs. At the median observation, one-half of the programs are larger than the median number of participants and one-half are smaller. The median program size at the State level was 624 participants.

There are a surprisingly high number of large programs. This phenomenon could have several causes. One possible cause is that programs in Alabama can serve large numbers of participants with available funding. Another possible cause is that respondents reported the number of people exposed to their services rather than the number of people who actually participated. It is also possible that respondents simply overestimated the number of people served. We recommend further study. Understanding why programs are reporting such large numbers of participants will help State planners determine whether program sizes are optimal.

Question 4: What populations do the programs serve?

Special Populations

Block Grant programs throughout the State targeted school-based populations the most frequently. Approximately 58% of the programs reported that middle-school students were the primary population. Elementary school students, high school students, and students at risk of dropping out of school were the next most common target populations. Between 44% and 45% of Block Grant programs worked with these populations. Programs targeting delinquent/violent youth and economically disadvantaged youth were almost as common. Each group was a primary population for 40% of Block Grant programs. Parents and families were the next most common primary populations, with 29% of programs considering them to be primary populations. The remaining populations were primary populations for 22% or less of Block Grant programs in the State. At the regional level, the percentage of programs varied a great deal, although the most common target populations in the State tended to be the most common target populations in each region.

In contrast to the Governor's Grant and DARE grant, Block Grant funds can be used for all populations. However, there is an emphasis at the Federal level on economically and socially disadvantaged populations that may have few other resources for prevention. The results from this study suggest that these populations may be underserved by Block Grant programs. Only 18% of programs reported that rural or isolated populations were primary populations, while a mere 9% targeted urban or inner city

populations. A larger percentage, 40%, targeted economically disadvantaged youth, but only 16% reported that economically disadvantaged adults were a primary population. We recommend State and local planners consider increasing the number of programs targeting these populations.

Many other populations in need appear to be overlooked by most Block Grant programs. College students and pre-school students are two of the larger populations served by only a handful of programs. A number of smaller populations are also targeted by only a few programs. These populations include but are not limited to coalitions, business and industry, homeless/runaway youth, and migrant workers. Some of these populations may also be appropriate for Governor's Grant programs. We therefore recommend that State and local planners from both funding streams perform a joint review of local demographic statistics and needs assessment data. The review process would determine which populations are present and need services in the area. Planners would then create a plan to provide services to each population in need without expending valuable resources on overlapping services.

On a final note, we recommend that planners in all three funding streams select programs that are appropriate for and effective with their target population. The Western Center for the Application of Prevention Technologies (CAPT) maintains a tool on its Web site that matches science-based programs with the appropriate target populations. The Web address for this site is <http://casat.unr.edu/westcapt/bestpractices/search.php>.

Gender

Most Block Grant programs in Alabama are co-educational. Statewide, approximately 70% reported mixed gender programs. The next largest programs serve mostly females, accounting for 15% of the total Block Grant programs. A smaller percentage of programs serve mostly males, approximately 6%. Programs serving males only or females only account each for only 5% of Block Grant programs. Regions 2 and 4 have the highest concentration of programs serving primarily one gender – 36%.

The results for participant gender are not surprising, since most prevention programs are designed for both males and females. Some programs, such as those for pregnant women, will be most relevant to one gender. We recommend that Block Grant programs continue to use gender-specific programs where appropriate.

Age

Block Grant programs appear to begin to work with children as they enter elementary school. Only 5% of the programs work with children under the age of four. Approximately 50% of the programs work with children in the age range of 5 to 11. A sizable 66% of programs serve youth ages 12 to 14, and 60% serve ages 15 to 17. Between 30% to 40% of the programs that serve the adult age group. Only 17% of the programs report serving the elderly, those ages 65 and older.

Block Grant funds can be used for participants of all ages, and two age groups appear to be underserved by these providers. Only 5% of Block Grant programs Statewide serve pre-school aged children, and only 17% serve the elderly. Both populations have prevention needs and are at risk for developing substance use problems. Pre-school aged children are at risk for developing these problems later in life, while the risk among the elderly is more immediate. In addition, many elderly are caretakers for children who could be at risk. In light of these risks, a recommendation is given to expand the continuum of services to include the children under age five and the elderly. Science-based programs have been designed especially for young children. To meet the needs of the elderly, programs should increase outreach efforts to this group and include them in programs for adults. It may also be necessary to adapt programs or design special programs to meet the specific needs of this population.

Ethnicity

Almost all Block Grant programs worked with participants from Alabama's two main ethnic groups, African-Americans and whites. Approximately 98% of the programs serve African-American and 94% serve white participants. Fewer programs reported working with participants in Alabama's smaller ethnic groups. Approximately, 32% of programs had Hispanic/Latino participants, while 10% had Native American participants, and 8% had Asian participants. There were no programs with Native Hawaiians or Pacific Islanders.

Block Grant programs tend to serve the State's smaller ethnic groups (Hispanic/Latinos, Native Americans, Asians, Hawaiians, and Pacific Islanders) less frequently. These results could reflect the small size of these ethnic groups or could indicate that the groups are underserved. It is recommended that local planners examine the ethnic makeup of their programs and compare it to the ethnic makeup of the area they serve. If certain groups appear to be underserved, programs should perform additional outreach and needs assessment among these ethnic groups to understand how they can better meet their prevention needs.

Question 5: Has the state met its strategic goals for prevention service delivery?

The data from participating programs showed that certain Block Grant goals for the fiscal year 2000 were met in some regions. Goal one (ten family strengthening programs per region) was met by participating programs in all regions except Region 3. The second goal, to provide twenty high-risk adolescent education programs per region, was not met in any region. Goal three was to provide twenty high-risk adolescent alternative programs. Participating programs in Region 1 met this goal, while participating programs in Region 2 were only one program short of meeting the goal. The fourth goal was to provide a continuum of services in each region. The CRA questionnaire does not assess whether problem identification and referral is provided, but it does assess the popularity of all other services in the continuum. For these other services, participating programs in Region 4 met the State's goal, and participating programs in Regions 1 and 2 came very close. Environmental activities were the only

service missing from the continuum in Region 1, while information dissemination was the only missing service in Region 2.

This study can inform planners which goals were met among Block Grant programs participating in this study. Some Block Grant programs did not participate in the study due to non-response issues and problems with the initial sample frame. These non-participating programs likely make a contribution to each of the State's goals. It is therefore possible that goals that were not met among participating programs were met through a combination of participating and non-participating programs. Further study of non-participating programs is required to determine whether this is the case. We recommend the State study the services provided by non-participating programs to determine whether these goals were met. The State may also wish to further investigate which programs offer problem identification and referral, which was not adequately assessed by this study.

Based on the data from participating programs, several additional recommendations regarding participating programs can be made. First, we recommend that planners focus their attention on the quality of programs related to all goals. Planners should work with program providers to ensure programs are proven effective and appropriate for the local population. Second, we recommend the State reconsider goal 3, which was to provide at least ten alternative programs in each region to high-risk youth. Since alternative strategies are not considered effective on their own, we recommend changing this goal to combine alternative activities with other effective strategies such as life skills training and community mobilization efforts (a program area that is needed but not widely implemented, which is discussed in more detail in the paragraph below).

There are several recommendations pertaining to goal four, which was to provide a continuum of services. A major recommendation is to provide more environmental strategies and community-based processes. Only a few primary services fell into these categories, yet these community-oriented activities are vital to Alabama's prevention efforts. These strategies mobilize communities and help reduce barriers such as lack of public awareness and lack of community interest. In addition, they can reduce environmental risk factors such as access to substances and community laws and norms favorable to substance use. We highly recommend that programs collaborate with coalitions and other community groups to increase the delivery of community-based processes and environmental strategies.

Another recommendation relevant to goal four concerns information dissemination. This service can reach a wide audience, giving rise to the possibility of overlap among programs. In regions where multiple programs provide this service, we recommend coordination among programs to ensure that programs reach audiences throughout the region without providing redundant information.

A minor recommendation pertains to education. Educational programs account for the majority of services in each region. We see no need for change in this area, since education is a cornerstone of prevention. However, we recommend State planners

subcategorize educational services and make each category a part of the services continuum. This step would ensure that the continuum spans all risk factors, protective factors, and content areas.

Our final recommendation is further investigation of programs offering problem identification and referral. The questionnaire for this study does not explicitly ask about this service category, and it is difficult to discern how many programs offer it. If the State wishes to determine whether this service is available in each region, further study is necessary.

Question 6: How Can The State Improve The Delivery Of Prevention Services At The Regional And State Level? Best Practices

Science-based programming

Among Block Grant programs it was difficult to discern the overall popularity of science-based programs, since most programs had general names that did not describe the curriculum in use (e.g. youth council). There were several programs named after science-based curricula however, which suggest that science-based programs are known in the State.

Programs in all funding streams should select the most effective programs available. We recommend that Block Grant programs select evidence-based programs whenever they are appropriate for the local population. Lists of science-based programs are available on the Western CAPT's Web site at (<http://casat.unr.edu/westcapt/bestpractices/search.php>).

Collaboration

In general, Block Grant providers worked collaboratively with other organizations. Statewide, approximately 76% of programs participated in joint planning with other groups, and 71% co-sponsored activities. Sharing funding or staff was less common but still practiced by 35% of Block Grant providers in the State.

A major recommendation concerns sharing funding or staff with other programs. This form of collaboration can help alleviate shortages in staff due to a lack of funding, which was a frequently cited barrier throughout the State. Sharing funding or staff was relatively rare, with the exception of Block Grant programs in Region 1. We recommend that programs seriously consider this form of collaboration.

We also recommend that programs that do not currently engage in joint planning and co-sponsoring activities consider doing so. These activities allow programs to benefit from the knowledge and skills of other agencies and can strengthen ties with the community. This recommendation is especially applicable to Block Grant providers in Region 3, where few programs collaborated with other organizations.

Use of data

Among Block Grant programs, some uses of data were more common than others. Approximately 95% of all Block Grant programs used data either to meet funding requirements or to determine program effectiveness. Approximately 94% of all Block Grant programs used data to support grant or contract proposals. Between 84% and 88% of programs used data for program planning, describing activities and participants, or both purposes. Slightly less than one-half of programs in the State used data to report to key stakeholders, approximately 46%. Few providers, between 19% and 23%, reported using data for formal needs assessment or community mobilization. Only 1% of programs in the State used data for another purpose.

We recommend that programs make full use of available data. Among Governor's Grant programs, three purposes tend to be underutilized: reporting to key stakeholders, formal needs assessments, and community mobilization. Programs in each region tended to use data less frequently for these purposes, but there are clear benefits from each use of data. Reporting data to key stakeholders can help garner support for programs, while needs assessments help planners determine and plan for local prevention needs. Using data in community mobilization efforts can raise awareness, inspire communities to act, and highlight progress. Community mobilization is especially important in Alabama, since programs frequently reported related barriers, such as a lack of community interest and a lack of public awareness of services offered.

Barriers

Individual barriers

Block Grant programs reported a variety of barriers. Two of the most common barriers in the State were lack of community interest and lack of public awareness of services offered. Each was a barrier for between 51% and 54% of Block Grant programs. Lack of transportation, participant drop out, and insufficient staff due to a lack of funding were almost as common and were reported by over 40% of programs. Staff turnover was also common, with 37% of programs experiencing it. The remaining barriers listed on the survey appeared to be less problematic and were reported by less than 33% of Block Grant programs in the State.

Programs in all three funding streams face a number of barriers. Some barriers are common Statewide while others are unique to each region. We recommend State planners focus on reducing the most common barriers Statewide. Local planners can then address barriers unique to their region. Among Block Grant programs, provider rapport with the community appears to be an important issue. Lack of community interest and lack of public awareness of services were among the top barriers in the State, suggesting a need for publicity and other community mobilization efforts. State planners can assist these efforts through training and technical assistance. In addition, several relevant training modules are available through one of CSAP's Web sites (<http://p2001.health.org/>). State agencies can also encourage local programs to focus on these issues by incorporating a plan to address barriers into the grant application process.

Lack of transportation also was a common barrier for Block Grant programs. There is a need for planners and programs to work together to develop creative solutions to this problem (e.g. encouraging participant car pools). State agencies can also reduce this barrier by incorporating transportation planning into the grant application process and allowing programs to allocate funds towards transportation.

A final recommendation pertains to insufficient staff due to a lack of funding. Current budget cuts in the State will make this barrier challenging to resolve, but it should be addressed. We therefore recommend State and local planners work together to develop creative methods of attracting and retaining staff.

Average number of barriers

Block Grant programs in the State reported an average of 5 barriers out of a total of 17 possible barriers. At the regional level, the average number of barriers ranged from three to eight. Programs in Region 1 reported an average of eight barriers, while programs in Region 2 reported an average of three. In Regions 3 and 4, the average number of barriers was five.

This finding highlights the need for State and local planners to work with programs to overcome these barriers. We recommend State planners address the barriers that are most common throughout the State, while local planners attend to barriers specific to their area.

2. METHODOLOGY FOR INTEGRATIVE ANALYSIS

OVERALL FRAMEWORK AND ANALYTIC APPROACH

Research Questions

The primary aim of this report is to synthesize the data from the three studies in order to better understand met and unmet prevention needs in Alabama. A series of research questions guides this exploratory approach.

- What is the relationship between the risk and protective factors measured by the student survey and the risk and protective factors measured by social indicators studies?
- Can the social indicators be used to predict youth risk and protection during “off years” of the survey?
- How do sub state areas and target populations with highest rates of ATOD use (by drug) compare with sub state areas and target populations that exhibit high levels of risk and protection?
- How does prevention need vary by demographic characteristics?
- How does prevention need vary by program type?

The CSAP Model

The CSAP model for prevention needs assessment provides a starting point for answering our research questions. The model draws upon the Hawkins and Catalano model of risk and protection, and centers on three studies. The first study is a survey of youth that collects information on risk and protective factors for substance use and juvenile delinquency. The information is organized into scales, each of which is intended to measure a particular risk or protective factor in the Hawkins and Catalano model. The second study is a social indicators study, which collects summary statistics about each county, such as arrest rates, using archival sources. In the CSAP framework the indicators are organized into sets, and each set is associated with a particular concept. This organization suggests that individual indicators, in the same set, can be combined into one index, forming one measure of the concept associated with the individual indicators. Many of these concepts correspond to a risk or protective factor from the Hawkins and Catalano model. The indices for these concepts are therefore similar to the scales on the student survey, in that each index measures a risk or protective factor.

The third study is the community resource assessment, a survey of local-level prevention programs. This study assesses the types and characteristics of programs that are in place in each county. An important set of characteristics are the goals of each program. Most of the goals in the community resource assessment correspond to

the risk and protective factors in both the Hawkins and Catalano and CSAP models. This information can inform planners as to which risk and protective factors, programs are targeting.

The similarity between the indices in the social indicators study, the scales from the student survey, and the goals in the CRA suggests a method for integrating the data. The student survey scale scores could be aggregated to the county level and combined with the social indicator indices measuring the same risk or protective factor. This combined measure of the risk or protective factor would then be compared with programs in the county where the risk or protective factor was a goal. This comparison would help planners understand both the need for services targeting the risk or protective factor and how well the need is met by current programs. For example, the scores from the student survey scale for family conflict could be aggregated among all students in the county. This aggregate measure of family conflict would then be combined with the social indicator index for family conflict. The result would be one measure of the family conflict risk factor using data from both studies. This measure could then be compared with the number of programs in the county that listed reducing family conflict as a goal in the community resource assessment.

Empirical Tests

The method described above is based on a conceptual model, in which both the student survey and social indicators measure the same risk and protective factors. Before attempting to apply the method, we tested whether the data supported this concept. First, we tested whether the social indicator indices were valid measures of their associated risk and protective factors⁴. Invalid indices would not measure risk and protection accurately enough and should not be used in the model. Second, we tested whether there was a statistical relationship at the county level between each student survey scale score and the associated social indicator index. A statistical relationship is necessary in order to interpret any measures created by combining the student survey and social indicators data.

Testing methods and the results are described in later sections of this report. In brief, the data failed to support the idea of combining the student survey and social indicators data. We found no evidence that valid indices of risk and protection could be created using the social indicator data and found no relationship between the student survey and social indicator data. It was therefore deemed inappropriate to create measures of risk and protection by combining the student survey and social indicator data.

An Alternate Framework

Given the empirical findings, it was necessary to create an alternate framework and analytic approach. In this approach, the student survey and social indicator data are both used as measures of the need for services. However, the data from each study are considered separately. This framework allows the community resource assessment

⁴ We did not test whether the student survey scales were valid measures of risk and protection, since prior large-scale studies in the CSAP Prevention Needs Assessment program performed extensive testing and concluding that the scales were valid.

data to be compared with both the social indicator and student survey data without combining the latter two data sets.

METHODS FOR ANSWERING EACH RESEARCH QUESTION

What is the relationship between the risk and protective factors measured by the student survey to the risk and protective factors measured by social indicators studies?

The first step in assessing the relationship between risk and protection measured by the student survey and social indicator studies was to create a common set of measures on which they could be compared. These studies were diverse both in terms of the variables collected and their respective methodologies. As a result, there were no variables from the two studies that could be directly compared. However, the variables from both studies could be categorized into similar Hawkins & Catalano model risk and protective factors. This model presented one possible solution. Since the Student Survey factors has previously well documented as being validated, the validity of the risk and protective factors was examined for the Social Indicators Study.

The Social Indicators Study employed several methods in an attempt to validate grouping the social indicators into the factors of the Hawkins & Catalano model. A Modified Multitrait-Multimethod Matrix was used to determine if the factors displayed convergent and discriminant validity as would be expected assuming that different factors represented different concepts within a conceptual framework.

The Modified Multitrait-Multimethod Matrix specified two main requirements to validate the factors based on the assumption that items that are more conceptually similar should correlate to a higher degree than items that are less conceptually similar. The first requirement of the method was that the reliability of the same indicator measured over time would be higher than any correlation between two different indicators. That is the similarity between an item and itself (highest conceptual similarity) should be greater than its similarity with a different item.

The second requirement was that the correlations between indicators within the same factor would be higher than the correlations between indicators from two different factors. These requirements were quantified based on the total number of possible violations of the model's requirements.

Can the social indicators be used to predict youth ATOD use during “off years” of the survey?

The Student Survey study estimated risk and protection based on a Signal Detection Theory model. Signal detection theory has been examined extensively in medical decision making research (e.g., Hauben & Zhou, 2003; Allan & Siegel, 2002; Zweig, 1988; Zweig & Campbell, 1993; Zweig, 1995), but has not yet been published as a method for estimating prevalence based on risk scales. The advantage of this technique is that it allows the researcher to determine which scale scores in the data demonstrate a relationship to the outcomes of interest. Useless or irrelevant scale

scores, that may have little or no relationship to the desired outcomes, may then be filtered. This would reduce or eliminate the influence of this superfluous information, leading to better targeting of resource allocation. For a more detailed description of the methods employed, please see the student survey TFR.

The Social Indicator study estimated risk based on measures already collected at the sub-state level. Indicators were screened for normality and transformed where necessary. Those indicators for whom there was yearly data for 3 consecutive years were tested for reliability using two different methods. Once the reliable indicators were determined, they were used to test the validity of the Hawkins and Catalano model of risk and protective factors using a Modified Multitrait-Multimethod Matrix as described in the previous section.

Since the *a priori* defined factor indices failed the Modified Multitrait-Multimethod Matrix test of their validity, a factor analysis was conducted in an attempt to create summary indices from the social indicators. The best way to avoid indicators canceling each other out is to be assured that only those indicators that correlate with each other are combined. Factor analysis explicitly combines and weights groups of variables into a number of factors based on their correlations with one another, though the underlying constructs associated with the factors created are subject to interpretation.

A total of four factor analyses were conducted, varying the number of factors and the rotation technique: 1) 3-Factor Varimax rotation, 2) 4-Factor Varimax rotation, 3) 3-Factor Oblimin rotation, and 4) 4-Factor Oblimin rotation. The appropriate factor model was selected based on the scree plot and factor scores created. These factor scores were then regressed to the Student Survey estimates of risk in order to determine if they would be capable of predicting the results from the Student Survey.

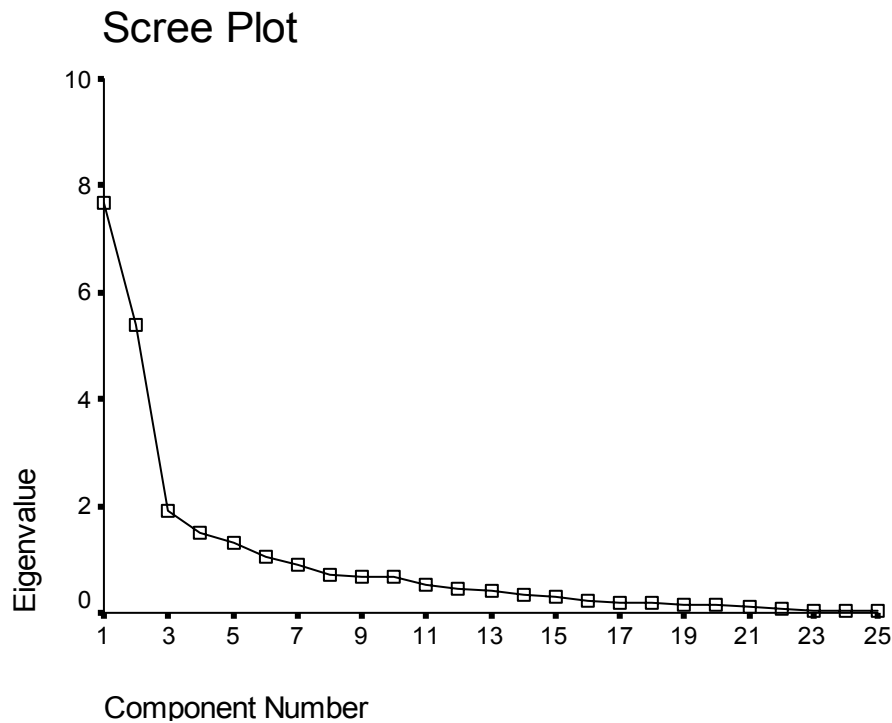


Figure 1. Scree Plot from the Factor Analyses

A three-factor model was adopted based on the scree plot (Figure 1). This decision was supported by the finding that the fourth factor in the 4-factor models was characterized by low loading on its indicators, and in cases where loadings exceeded .4 often that same indicator loaded to a similar or higher degree on other factors as well.

There were two remaining factor analyses, the 3-factor with Verimax rotation and the 3-factor with Oblimin rotation. Both these analyses yielded very similar results. Because of this similarity, the Verimax rotation was chosen since the factor scores created with this rotation are necessarily orthogonal, better lending them to inclusion in a multivariate regression model. Table 3 presents the correlations between the social indicators and the extracted factors.

Table 3. Correlations Between Social Indicators and Extracted Factor Scores

	3-Factor Verimax Rotation		
	1	2	3
Single Parent Families	0.941		
Free/Reduced Lunch Programs	0.924		
Food Stamps	0.919		
TANF	0.892		
Juvenile Pregnancies	0.722		
Alcohol Sales Permits	0.695		
Tobacco Sales Permits	0.688		

Unemployment	0.665		-0.465
Adult Violent Crime Arrests	0.608	0.468	
Divorce			
Families with Children in Foster Care			
Adult Drug-Related Arrests		0.819	
Adult Alcohol-Related Arrests		0.744	
Adult Property Crime Arrests		0.742	0.420
Domestic Violence		0.646	
Juvenile Alcohol-Related Arrests		0.597	
Voting Rate		-0.498	
Prisoners		0.461	
Juvenile Property Crime		0.489	0.763
Rental Households			0.747
New Home Construction			0.732
Juvenile Drug-Related Arrests		0.597	0.689
Juvenile Curfew, Vandalism & Disorderly Arrests		0.568	0.631
Status Dropouts			-0.512
Adults in Treatment			
Only loadings > 0.400 displayed.			

Each of the three factors extracted had a distribution with a mean of 0 and a standard deviation of 1. They were rescaled by multiplying each county's score by 10 and adding 50. This shifted the distributions, such that they had a mean of 50 and a standard deviation of 10, without changing the proportional differences between counties.

The predictive validity of the extracted risk factors was tested using self-report data collected from youth by the Alabama Student Survey on Risk and Protective Factors, another study in the prevention needs assessment project (Alabama Department of Mental Health and Mental Retardation Substance Abuse Services Division, 2003). The average number of risk scales for which youths were "at risk" was aggregated by county, separately for both 6th and 10th graders. Regression models used the extracted risk factor scores (3), a protection indicator (1) and the interaction of the risk factor and protection scores (3) to predict 6th and 10th graders' risk levels. Two separate pairs of regressions were conducted, for a total of four regressions. The pairs were composed of two regressions, one including the youth group rate as the protective indicator and the other including the churches rate as the protective indicator. One pair of regressions was conducted for each grade (6th and 10th).

How do sub state areas and target populations with highest rates of ATOD use (by drug) compare with sub state areas and target populations that exhibit high levels of risk and protection?

Maps were used to compare the geographic patterns of ATOD use (by substance) with risk and protection. Each county was shaded according to that county's prevalence rate

of ATOD use, risk, or protection. To allow for variation across age, we created maps for both junior high and high school students.

How does prevention need vary by demographic characteristics?

Need by Demographics: Age

Since prevention programs typically target either junior high or high school students, we created estimates of the county prevalence rates of risk and protection for each of these two populations. For each age group, there is a prevalence rate for each risk and protective factor with valid cut points for all grades. Prevalence rates were “collapsed” across substances to measure overall risk or protection. In other words, the prevalence rate measures the risk for or protection against any substance that produced a valid cut point.

We then mapped these risk and protective factor prevalence rates to illustrate any geographic patterns within the State. Each county was shaded based on the percentage of youth considered at risk or protected. There are separate maps for high school students and junior high school students.

Need by Demographics: Gender

Youth risk and protection was collapsed across substance and risk scale separately for males and females and aggregated by county to produce an estimate of the risk and protection for each gender by county. Maps of risk and protection were then produced for each gender to demarcate any geographic patterns within The State. Each county was shaded based on the proportion of male or female youths considered at risk or protected.

How does prevention need vary by program type?

A table was supplied of the top programs recommended by the student survey and social indicators studies for each county. For the student survey, this was determined by first matching science programs to risk scales. Then, each individual was assigned recommended programs based on the scales on which they were determined to be at risk. The three most frequently recommended programs within each county were reported. For the social indicators, we computed the three most “problematic” indicators in each county. The three most problematic indicators were the three indicators that were the most extreme relative to other counties. Appropriate science-based programs were then matched to each indicator, resulting in the list of top programs recommended for each county.

3. RESULTS

WHAT IS THE RELATIONSHIP BETWEEN THE RISK AND PROTECTIVE FACTORS MEASURED BY THE STUDENT SURVEY TO THE RISK AND PROTECTIVE FACTORS MEASURED BY SOCIAL INDICATORS STUDIES?

Modified Multitrait-Multimethod Matrix for Social Indicator Factor Scores

The standardized Cronbach's Alphas were used as the estimates of reliability for indicators that were compared to the inter-item correlations. A total of only 3 of the possible 713 comparisons (23 indicators with reliability estimates x 31 inter-item correlations between those indicators and all other indicators), or 0.4% represented violations of the assumption that reliabilities would be higher than inter-item correlations. This represented an acceptable rate of violation so as to continue to test the convergent and discriminant validity of the factors.

Modified MTMM: Evaluation of Factor Convergent and Divergent Validity

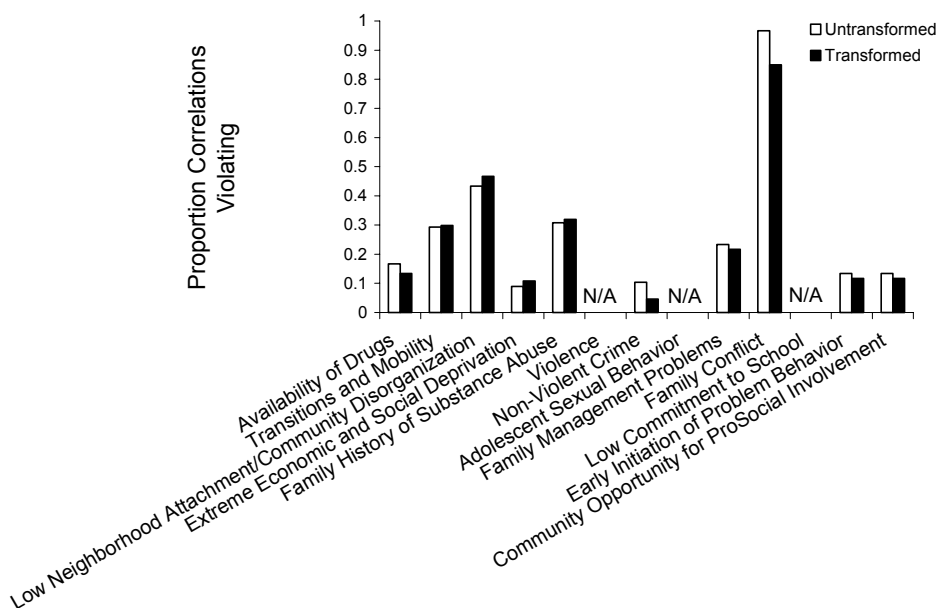


Figure 2. Degree Of Convergent and Discriminant Validity Violated in Modified Multitrait-Multimethod Matrix by Factor

Figure 2 shows the degree of convergent and discriminant validity violated in the Modified Multitrait-Multimethod Matrix, by factor. Each bar represents a factor. Optimally, each factor would have a score of zero, representing no violations of convergent and discriminant validity. Categories marked as N/A contained only one reliable social indicator and so convergent and discriminant validity could not be

assessed. While some factors demonstrated better convergent and discriminant validity than others, more than 20% of the inter-factor and intra-factor correlation comparisons overall violated the assumptions required for validation. In addition, it is important to consider the gains associated with creating factor scores relative to the social indicators themselves. There are relatively few indicators in each factor (most 1-2, 6 at the highest) and so the advantage of averaging within the factor is minimized, particularly when there are indicators in that factor that better correlate with indicators not included in that factor. If the proportion of correlations violating the assumptions for a factor was zero, it could safely be concluded that grouping the indicators into that factor was appropriate. If the proportion of correlations violating the assumptions was higher than zero, then it was necessary to look at the magnitude of the individual correlations.

Consider Non-Violent Crime; while this factor demonstrated the best convergent and discriminant validity, it was composed of only three indicators. The advantage of reducing only three indicators to one factor was lessened by the observation that those indicators correlated to an even higher degree with other indicators not in that factor, including as high as $r = 0.971$. As this example represents the best case observed for a factor being accepted, it is clear from the Modified Multitrait-Multimethod Matrix that the factors as they were structured failed to be sufficiently validated. As a result, the construction of factor summary measures following this structure was not appropriate and so they could not be compared to those of the Student Survey.

Summary

The conclusions from the Social Indicators Modified Multitrait-Multimethod Matrix revealed that a factor-level grouping of indicators could not be validated. As a result, comparable factors were not created with which to evaluate the relationship between the Social Indicator and School Survey factor scores. The recommendation for each study was to address risk and protection based on the individual indicators or scale scores.

CAN THE SOCIAL INDICATORS BE USED TO PREDICT YOUTH ATOD USE DURING “OFF YEARS” OF THE SURVEY?

Table 4 shows the ANOVA and regression parameter summaries for the factor model predicting youth risk. Counties that did not have respondents for a grade were not included in that grade's analysis. (The counties without respondents in grade 10 were Bullock, Macon, and Russell. All counties had respondents in grade 6). None of the models were able to predict average youth risk by county. As a result, it was concluded that none of the extracted factors, protective indicators, or their interactions had predictive validity in terms of youth risk for substance use. This finding was thoroughly examined for the influence of outliers by verifying that dramatic changes in the parameters did not occur with the removal of one or more counties' data from the analysis. No outlying counties were found.

Table 4. Summary of Regressions Between Factor Scores and the Student Survey Risk Measure

Average Number of Risk Scales for which 6th Graders were "At Risk" within the County

	SS	df	MS	F	p
Model	1.094	7	0.156	0.911	0.504
Residual	9.946	58	0.171		
Total	11.040	65			
	B	Std. Error	t	p	
Constant	2.148	0.458	4.687	0.000	
Factor 1	0.002	0.005	0.408	0.685	
Factor 2	0.001	0.005	0.172	0.864	
Factor 3	0.000	0.005	-0.052	0.959	
Youth Groups	0.996	0.441	-1.667	0.101	
Factor 1*Youth Groups	-0.010	0.006	-0.699	0.487	
Factor 2*Youth Groups	-0.004	0.006	-1.160	0.251	
Factor 3*Youth Groups	-0.006	0.006	2.188	0.033	

	SS	df	MS	F	p
Model	0.138	7.000	0.020	0.105	0.998
Residual	10.920	58.000	0.188		
Total	11.058	65			
	B	Std. Error	t	p	
Constant	2.128	0.484	4.400	0.000	
Factor 1	0.001	0.006	0.111	0.912	
Factor 2	0.001	0.005	0.274	0.785	
Factor 3	0.001	0.006	0.137	0.892	
Churches	0.031	0.527	0.058	0.954	
Factor 1*Churches	0.000	0.008	0.005	0.996	
Factor 2*Churches	0.003	0.004	0.658	0.513	
Factor 3*Churches	-0.004	0.007	-0.529	0.599	

Average Number of Risk Scales for which 10th Graders were "At Risk" within the County

	SS	df	MS	F	p
Model	1.091	7	0.156	1.709	0.126
Residual	5.017	55	0.091		
Total	6.108	62			
	B	Std. Error	t	p	
Constant	3.804	0.356	10.667	0.000	
Factor 1	-0.004	0.005	-0.888	0.378	
Factor 2	0.003	0.004	0.787	0.435	
Factor 3	-0.003	0.004	-0.852	0.398	
Youth Groups	-0.007	0.329	-0.021	0.983	
Factor 1*Youth Groups	-0.011	0.005	-2.059	0.044	
Factor 2*Youth Groups	-0.008	0.005	1.721	0.091	
Factor 3*Youth Groups	0.002	0.004	0.579	0.565	

	SS	df	MS	F	p
Model	0.677	7.000	0.097	0.979	0.456
Residual	5.431	55.000	0.099		
Total	6.108	62			
	B	Std. Error	t	p	
Constant	3.920	0.368	10.654	0.000	
Factor 1	-0.008	0.004	-1.842	0.071	
Factor 2	0.003	0.004	0.686	0.496	
Factor 3	-0.002	0.004	-0.531	0.598	
Churches	-0.001	0.394	-0.002	0.998	
Factor 1*Churches	0.000	0.006	-0.035	0.972	
Factor 2*Churches	-0.003	0.003	-1.065	0.292	
Factor 3*Churches	0.003	0.005	0.605	0.548	

It is, therefore, our recommendation to address risk and protection for substance abuse on an individual indicator level, and not to pursue a data reduction model. This process will also better enable counties to customize their prevention programs based on their own individual county profile, taking into account specific resources available to them, as well as random variables not readily available from social indicators data.

HOW DO SUB STATE AREAS AND TARGET POPULATIONS WITH HIGHEST RATES OF ATOD USE (BY DRUG) COMPARE WITH SUB STATE AREAS AND TARGET POPULATIONS THAT EXHIBIT HIGH LEVELS OF RISK AND PROTECTION?

Lifetime Use, Risk and Protection by Substance

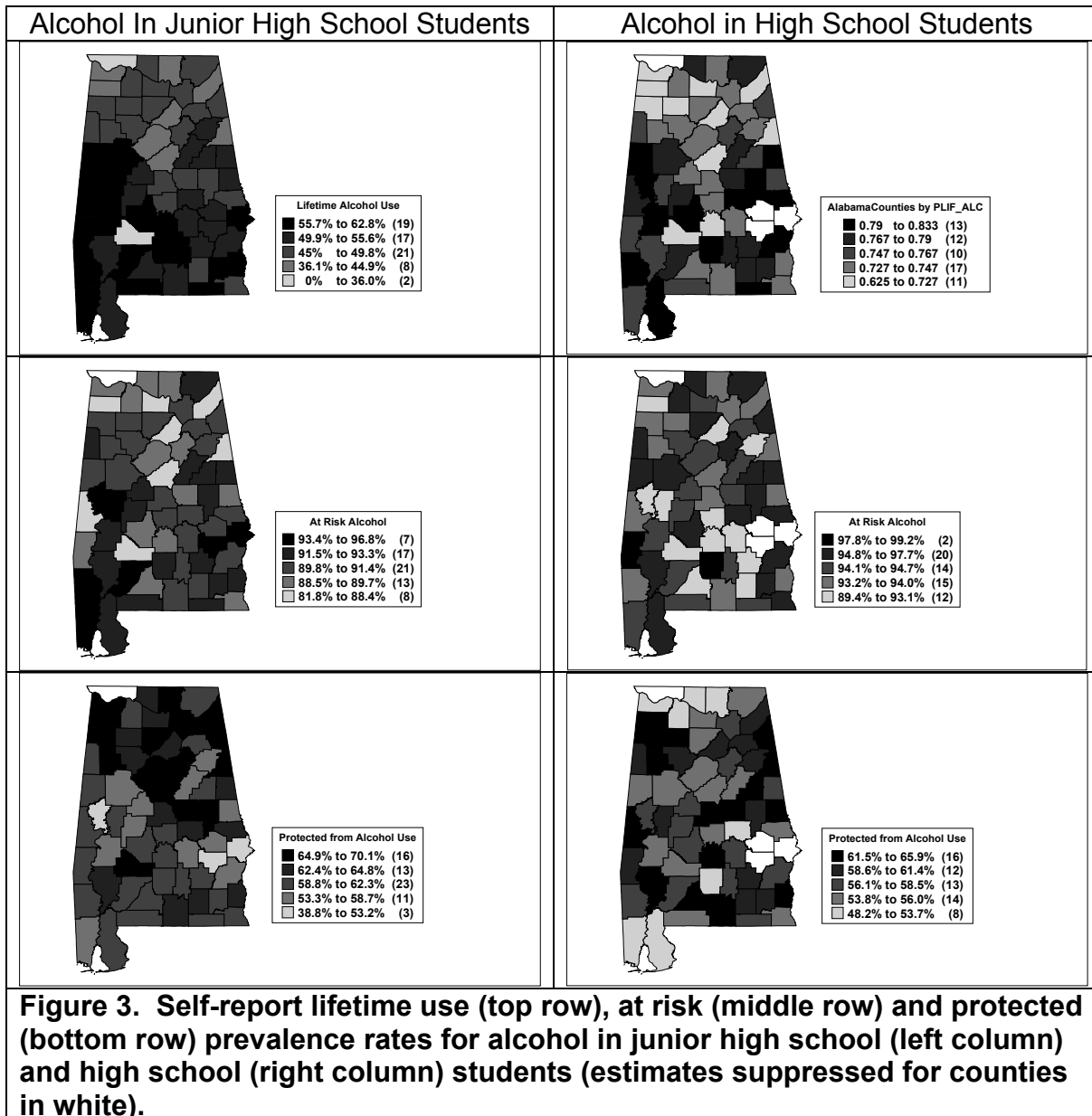
In this section, maps were used to: 1) highlight any geographic patterns that may emerge in lifetime use, risk or protection, and 2) to allow for the comparison of any patterns between lifetime use, risk and protection. Each county was assigned one of five shades based on their scores on the variable of interest. Maps were created for both junior high school and high school students separately to account for age-based differences. Proportions represent the weighted proportion of the relevant population (i.e. proportion of high school students at risk out of the total number of high school students in the county).

The scaling of the shades was determined using the natural break method from the MapInfo software. This permitted the scale to vary with the range and the distribution of

the variable of interest, maximizing our ability to detect geographic patterns in the data. However, because the break points in the shades vary by map, the reader must take care not to equate colors across maps, even when the variable of interest is the same. That is, this method allows for the detection of geographic patterns within one map by shading counties relative to each other. These patterns may then be compared to the patterns from other maps, but their relative scale should be noted (i.e. The prevalence was generally higher/lower in the south for both junior high and high school students; and the prevalence rates for high school students were generally higher/lower than those of junior high students.)

The reader should also keep in mind the method used for assessing risk and protection when assessing their relationship to lifetime use. Risk and protection scales were validated based on lifetime use, creating some element of a self-fulfilling prophecy. However, the cut point at which to declare an individual at risk or protected was optimized based on sensitivity and specificity to lifetime use. These measures are independent of the use prevalence rate and, as a result, so are the absolute levels of the prevalence rates for risk and protection. Because only those scales that have predictive value are used (area under ROC curve >0.70), the risk and protection prevalence rates necessarily correlated with the use prevalence rates, but the criteria was sufficiently liberal as to allow for a number of false positives. These represent at risk individuals who had not reported lifetime use, a particularly important subgroup to capture in addition to current users in terms of prevention.

Lifetime Alcohol Use



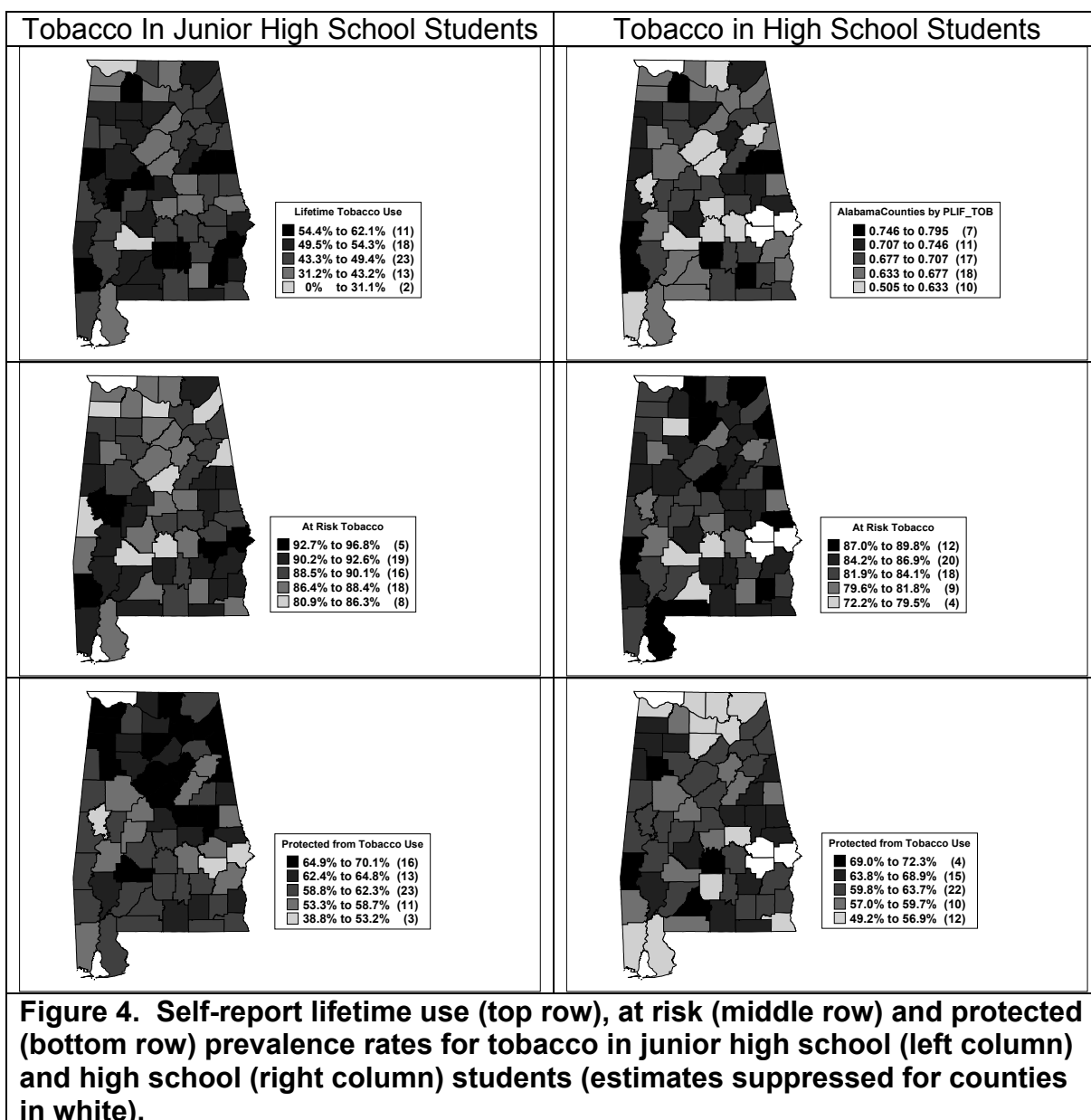
Junior High School Students

The highest prevalence rates of self-report lifetime alcohol use for junior high school students were concentrated in the south-west of the state. Although the prevalence rate of individuals at risk for alcohol use was high throughout the state (>80% in every county), it did not closely follow the same county relative to county pattern as lifetime usage. In particular, Sumter and Choctaw counties had high rates of usage, but low rates of risk relative to other counties. The opposite was true of Dallas and Lowndes counties, implying high risk relative to usage. Prevalence rates of protection more closely followed the pattern of usage with higher rates of protection in the north-eastern areas of the state relative to the south and south-west.

High School Students

A similar pattern of usage to junior high school students was seen in the high school students' usage prevalence rates, but the rates were overall higher. The counties with the highest prevalence rates of usage were generally found in the west and south-west of the state, though the pattern was less pronounced. The prevalence of high school students at risk was high statewide (> 89% in every county). Risk more closely followed usage for high school students than for junior high school students, but there were exceptions. Greene County was one of the highest in terms of use, but lowest in terms of risk. The relationship between protection and use was also less clear for high school students than for junior high school students.

Lifetime Tobacco Use



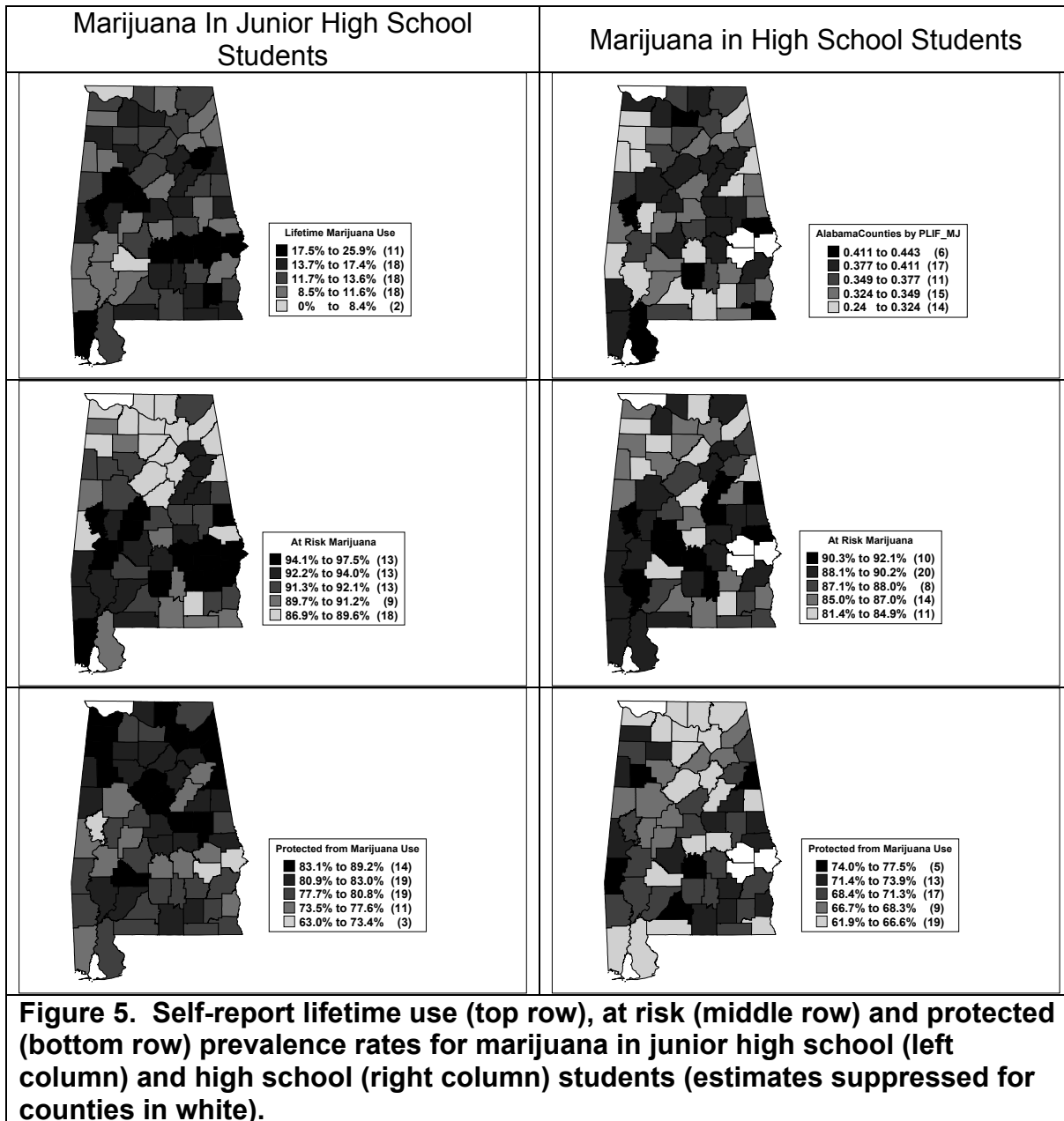
Junior High School Students

There was no clear geographic pattern of self-reported tobacco use in junior high school students. Interestingly, risk prevalence rates did appear to follow a similar pattern to usage, though protection did not. The counties that were highest in protection followed a clear geographic pattern and were mostly concentrated in the north and east of the state.

High School Students

Again, as was true for junior high school students, there was no clear geographic pattern to the use prevalence rates or risk prevalence rates, but the two appeared to be related. Contrary to the junior high school students, the prevalence rates for protection for high school students were low in the upper north relative to the east and middle of the state.

Lifetime Marijuana Use



Junior High School Students

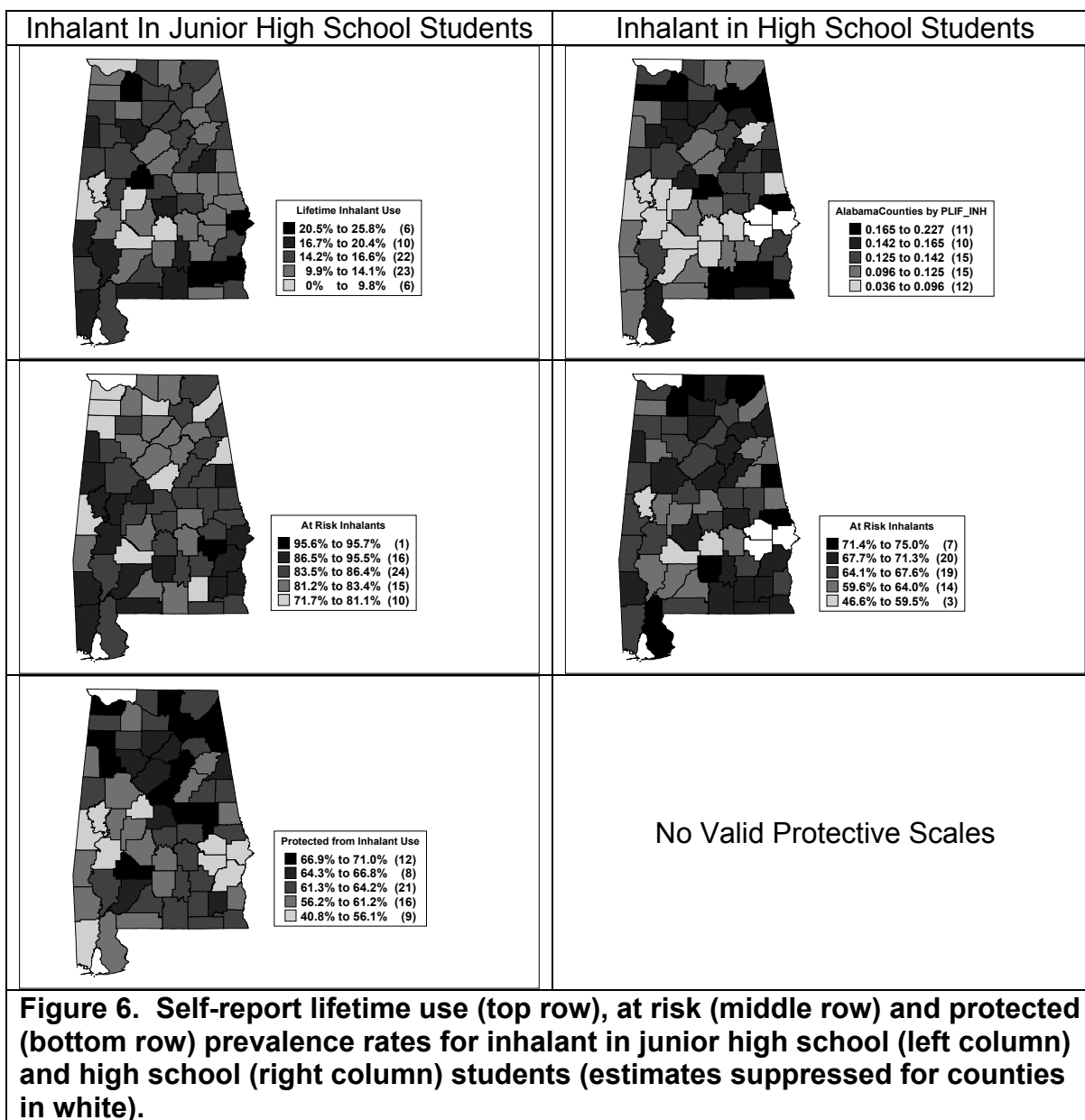
Marijuana usage prevalence rates were generally lower than alcohol and tobacco across the state for junior high school students. The counties with the highest prevalence rates were mostly in the mid-east of the state in or around metropolitan areas. Risk prevalence rates followed a more clearly demarcated north-south pattern, with the counties with the highest prevalence of junior high students at risk in the south. Protection also showed strong north-south pattern, with the more protection in the north. Many of the counties, such as Russell, Macon, Bullock, Montgomery, Autauga, and

Greene that had high prevalence rates of usage were also high on risk and low on protection.

High School Students

Marijuana usage overall higher for high school students and was clearly higher in and around metropolitan counties, though there were exceptions. Risk, though also high in and around most metropolitan areas was also concentrated in the south-west of the state and appeared less related to usage in that area. Protection was relatively low in metropolitan areas, but otherwise not related to risk or usage.

Lifetime Inhalant Use



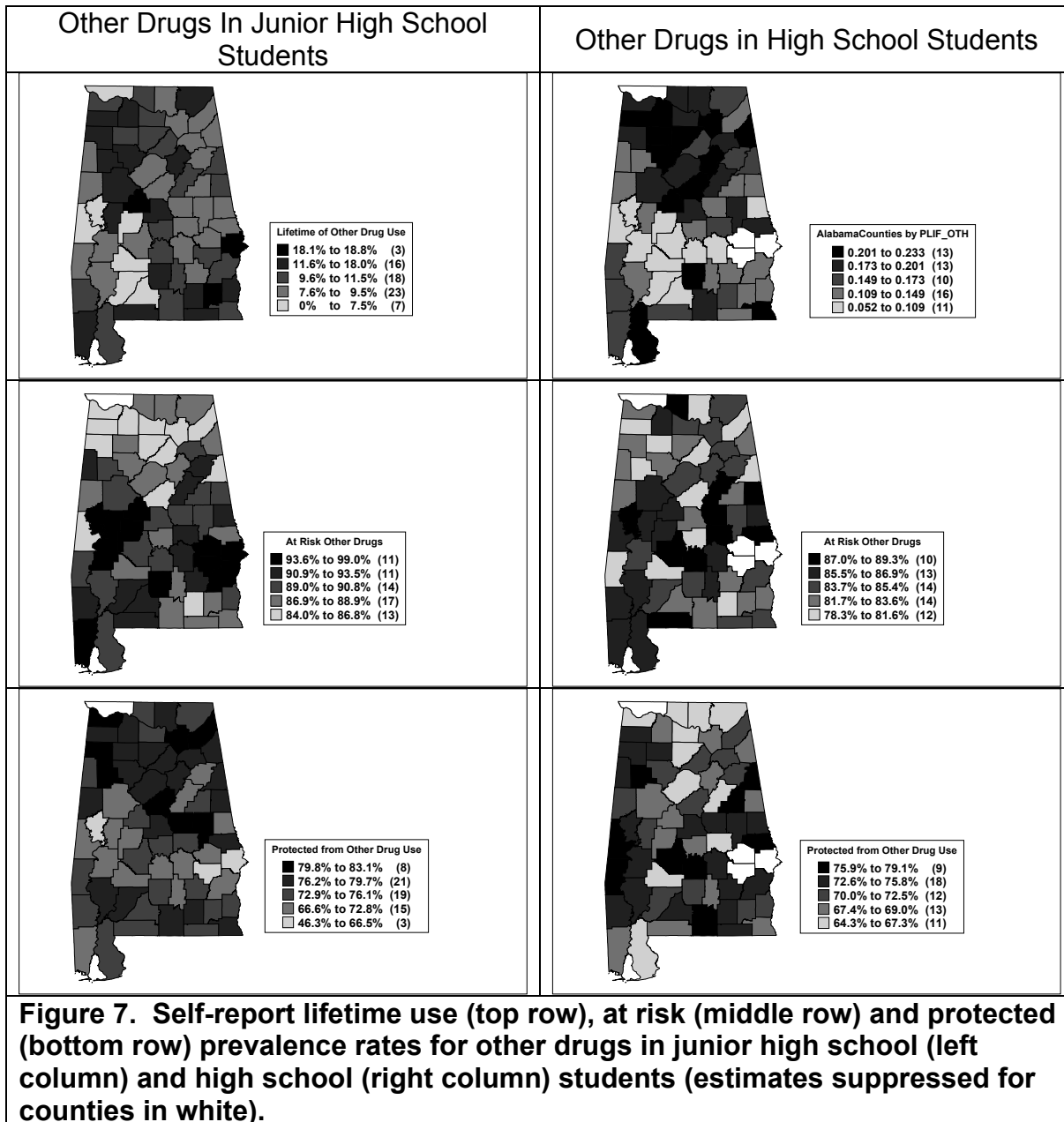
Junior High School Students

Lifetime inhalant use was fairly evenly distributed between counties in the north, south and east of the state with the mid-west having a lower prevalence in junior high school students than other regions. Risk was generally lower in the north-west corner of the state and appeared unrelated to usage. Protection followed a north-south pattern with the highest rates of protection in the north.

High School Students

Unlike other substances, in high school students, the absolute prevalence rates across the state were similar or lower than in junior high school students. Inhalant use was particularly low in the south and south-west of the state. Again, the relationship to risk was unclear, but this may have been due to the overall restricted range in values across counties. There were no validated protective factors.

Lifetime Other Drug Use



Junior High School Students

Other drug use, risk and protection followed similar patterns to inhalant use, risk and protection in junior high school students. Overall use was lower than alcohol, tobacco and marijuana, with the lowest usage in the mid-west. Risk followed a clearer north-south pattern and was lowest in the north. Protection also showed a north-south pattern and was lowest in the south.

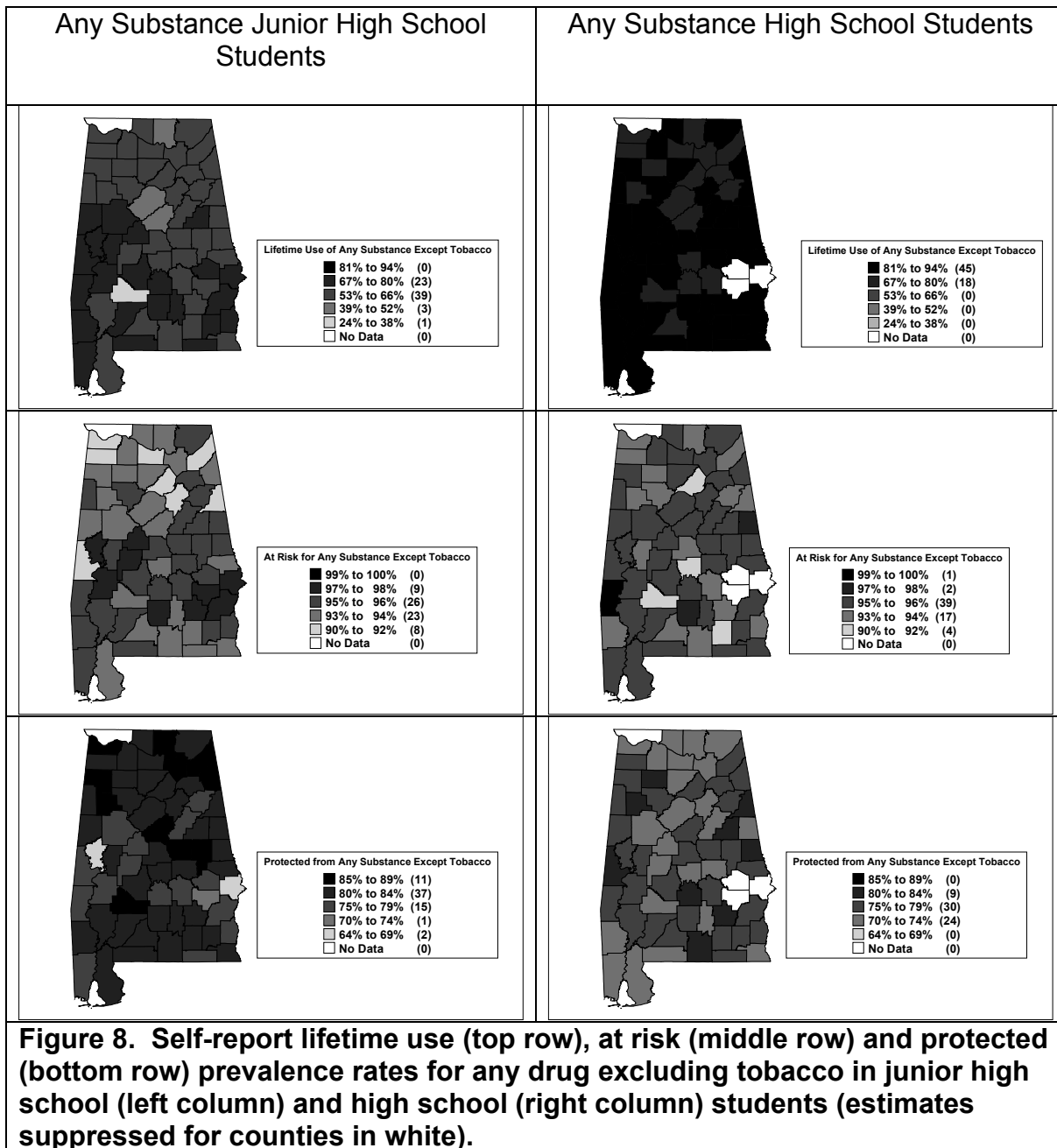
High School Students

As was true for junior high students, other drug use followed the same patterns as inhalant use for high school students. Usage was lowest across the south and highest in the north. Overall prevalence rates for use were slightly higher for high school students than for junior high students. Risk did not closely follow usage and risk and protection appeared unrelated to each other or usage.

HOW DOES PREVENTION NEED VARY BY DEMOGRAPHIC CHARACTERISTICS?

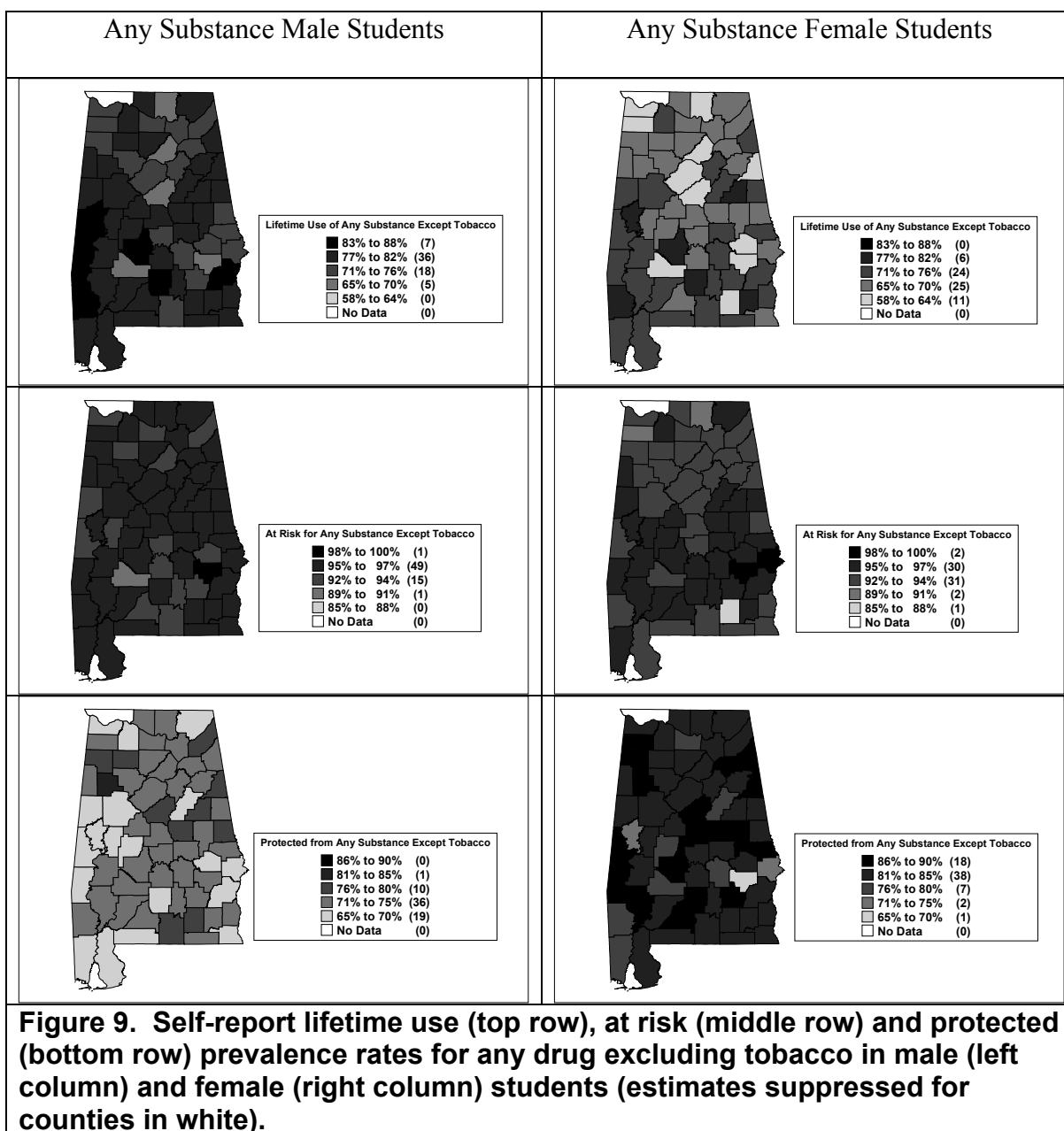
Use, risk and protection were aggregated across all substances using an “inclusive or” rule to give an overall measure of the proportion of the subpopulation that has any usage, risk or protection at all. The previous section focused on the relationship between risk, protection and self-report lifetime usage by substance; and generally was organized by comparing maps in a given column. This section focuses on differences between subpopulations on usage overall, comparing maps with rows. Where the scales were permitted to freely vary in the previous section, they were locked within a row in this section to facilitate comparisons by making shades comparable across maps in the same row.

Age



The prevalence rate of lifetime use of any drug (excluding tobacco) was universally higher for high school students than for junior high students. Risk prevalence rates were also generally higher or the same for high school students than for junior high school students, with the exception of many of the counties in the middle of the state, where risk prevalence rates were actually lower for high school students. Protection was also generally lower for high school students than for junior high school students.

Gender



Self-report lifetime substance use and risk prevalence rates were higher among male students than they were among female students with few exceptions. The opposite was true of protection, with female students having much higher prevalence rates. Also, the north-south pattern of use and risk was much more pronounced in females than in males, with more risk and usage in the south; while the north-south pattern of protection was more pronounced in males for protection, with more protection in the north.

HOW DOES PREVENTION NEED VARY BY PROGRAM TYPE?

The Student Survey and Social Indicators Studies made program recommendations based on individual scales and social indicators. Table 5 presented those recommendations by county based on that county's top three worst indicators or scales. When there were ties, all tied indicators or scales were used. When multiple programs applied to the same indicator(s) or scale(s), all those programs were presented. This was done to provide the maximum amount of flexibility to counties and providers. A legend for program abbreviations was provided in Table 6.

The programs most frequently recommended by the Student Survey Study, based on each county's the three worst scale scores were (based on 56 counties): 1) Lifeskills Training – 42 counties (75%), 2) Project Toward No Drug Abuse – 38 counties (68%) 3) Multi-component, School-linked Approaches and Stop Teenage Addiction to Tobacco – 35 counties (63%), and 4) Project STATUS – 26 counties (45%).

The programs most frequently recommended by the Social Indicator Study, based on each county's the three worst social indicators were: 1) Nurturing Program and Quantum Opportunities Program – 54 counties (81%), 2) Project PATHE and Project STATUS – 38 counties (57%), and 3) Challenging College Alcohol Abuse – 30 counties (45%).

Table 5. Recommended Programs by County from the Student Survey and Social Indicator Studies

County	Programs Recommended by Student Survey	Programs Recommended by Social Indicator Study
Autauga	LST	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	PSTATUS	ATP, AP, BSFT, CICC, ER, FET, FFT, IY, NP, OBP, PA, PATHS, PC, PP, PSTATUS, PW, PWC, QOP, SSDP
	MCSLCA, STOP	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Baldwin	MCSLCA, STOP	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	LST	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
	PSTATUS	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Barbour	PTNDA	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	MCSLCA, STOP	CCAA
	SMART	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
Bibb	PTNDA	NP, MTFC, PSP, QOP, RTC
	MCSLCA, STOP	QOP, RTC
	SMART	QOP, RTC

County	Programs Recommended by Student Survey	Programs Recommended by Social Indicator Study
Blount	LST	LRP, PP, PSTATUS, QOP, RYP
	PSTATUS	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	CLFC	ATP, AP, BSFT, CICC, ER, FET, FFT, IY, NP, OBP, PA, PATHS, PC, PP, PSTATUS, PW, PWC, QOP, SSDP
Bullock	NOT AVAILABLE	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	NOT AVAILABLE	QOP, RTC
	NOT AVAILABLE	NFP, QOP, RTC
Butler	MCSLCA, STOP	NP, MTFC, PSP, QOP, RTC
	PTNDA	QOP, RTC
	SMART	ATP, AP, BSFT, CICC, ER, FET, FFT, IY, NP, OBP, PA, PATHS, PC, PP, PSTATUS, PW, PWC, QOP, SSDP
Calhoun	NOT AVAILABLE	NP
	NOT AVAILABLE	NP, MTFC, PSP, QOP, RTC
	NOT AVAILABLE	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Chambers	PTNDA	CCAA
	MCSLCA, STOP	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
	SMART	NP
Cherokee	LST	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	PSTATUS	LRP, PP, PSTATUS, QOP, RYP
	CASA	NP
Chilton	PTNDA	BASICS, CCAA, CTIRHRD, PYPM
	LST	BASICS, CBT-CATS
	PSTATUS	NP
Choctaw	MCSLCA, STOP	CCAA, CMCA, CTIRHRD
	SMART	QOP, RTC
	PTNDA	RDI
Clarke	PTNDA	QOP, RTC
	LST	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
	MCSLCA, STOP	NFP, QOP, RTC
Clay	NOT AVAILABLE	LRP, PP, PSTATUS, QOP, RYP
	NOT AVAILABLE	NP, MTFC, PSP, QOP, RTC
	NOT AVAILABLE	NP

County	Programs Recommended by Student Survey	Programs Recommended by Social Indicator Study
Cleburne	PTNDA	LRP, PP, PSTATUS, QOP, RYP
	LST	BASICS, CCAA, CTIRHRD, PYPM
	PSTATUS	CCAA
Coffee	NOT AVAILABLE	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	NOT AVAILABLE	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
	NOT AVAILABLE	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Colbert	LST	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	CASA	BASICS, CCAA, CTIRHRD, PYPM
	PSTATUS	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
Conecuh	MCSLCA, STOP	NP, MTFC, PSP, QOP, RTC
	PTNDA	NP
	LST	NFP, QOP, RTC
Coosa	PTNDA	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	MCSLCA, STOP	CCAA
	ALERT	NP
Covington	LST	NP
	PTNDA	NP
	MCSLCA, STOP	RDI
Crensha	MCSLCA, STOP	BASICS, CBT-CATS
	PTNDA	CBT-CATS, HFA, HNC, NP, PAT
	LST	RDI
Cullman	LST	BASICS, CCAA, CTIRHRD, PYPM
	PSTATUS	CBT-CATS, HFA, HNC, NP, PAT
	SMART	NP, MTFC, PSP, QOP, RTC
Dale	NOT AVAILABLE	CCAA
	NOT AVAILABLE	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	NOT AVAILABLE	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
Dallas	PTNDA	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	MCSLCA, STOP	NP
	LST	NFP, QOP, RTC

County	Programs Recommended by Student Survey	Programs Recommended by Social Indicator Study
DeKalb	LST	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	PSTATUS	LRP, PP, PSTATUS, QOP, RYP
	CASA	NP
Elmore	MCSLCA, STOP	BASICS, CCAA, CTIRHRD, PYPM
	PTNDA	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	SMART	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
Escambia	LST	LRP, PP, PSTATUS, QOP, RYP
	PTNDA	BASICS, CBT-CATS
	MCSLCA, STOP	CCAA, CMCA, CTIRHRD
Etowa	PTNDA	LRP, PP, PSTATUS, QOP, RYP
	MCSLCA, STOP	CBT-CATS, HFA, HNC, NP, PAT
	LST	NP, MTFC, PSP, QOP, RTC
Fayette	PTNDA	LRP, PP, PSTATUS, QOP, RYP
	MCSLCA, STOP	NP
	SMART	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
Franklin	LST	LRP, PP, PSTATUS, QOP, RYP
	PSTATUS	BASICS, CCAA, CTIRHRD, PYPM
	PTNDA	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
Geneva	LST	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	PSTATUS	LRP, PP, PSTATUS, QOP, RYP
	SMART	CBT-CATS, HFA, HNC, NP, PAT
Greene	PTNDA	NP, MTFC, PSP, QOP, RTC
	MCSLCA, STOP	QOP, RTC
	SMART	QOP, RTC
Hale	NOT AVAILABLE	LRP, PP, PSTATUS, QOP, RYP
	NOT AVAILABLE	QOP, RTC
	NOT AVAILABLE	QOP, RTC
Henry	LST	CCAA
	PSTATUS	CBT-CATS, HFA, HNC, NP, PAT
	MCSLCA, STOP	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS

County	Programs Recommended by Student Survey	Programs Recommended by Social Indicator Study
Houston	LST	CCAA
	PSTATUS	ATP, AP, BSFT, CICC, ER, FET, FFT, IY, NP, OBP, PA, PATHS, PC, PP, PSTATUS, PW, PWC, QOP, SSDP
	PTNDA	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Jackson	LST	BASICS, CCAA, CTIRHRD, PYPM
	PSTATUS	NP
	CASA	RDI
Jefferson	MCSLCA, STOP	NP
	PTNDA	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
	LST	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Lamar	PTNDA	NP
	LST	NP, MTFC, PSP, QOP, RTC
	MCSLCA, STOP	RDI
Lauderdale	NOT AVAILABLE	BASICS, CCAA, CTIRHRD, PYPM
	NOT AVAILABLE	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	NOT AVAILABLE	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Lawrence	LST	LRP, PP, PSTATUS, QOP, RYP
	PSTATUS	BASICS, CCAA, CTIRHRD, PYPM
	CASA	CBT-CATS, HFA, HNC, NP, PAT
Lee	NOT AVAILABLE	BASICS, CCAA, CTIRHRD, PYPM
	NOT AVAILABLE	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
	NOT AVAILABLE	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Limestone	LST	BASICS, CCAA, CTIRHRD, PYPM
	PSTATUS	CBT-CATS, HFA, HNC, NP, PAT
	SMART	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Lowndes	MCSLCA, STOP	BASICS, CBT-CATS
	PTNDA	CCAA, CMCA, CTIRHRD
	LST	QOP, RTC
Macon	NOT AVAILABLE	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	NOT AVAILABLE	QOP, RTC
	NOT AVAILABLE	NFP, QOP, RTC

County	Programs Recommended by Student Survey	Programs Recommended by Social Indicator Study
Madison	LST	ATP, AP, BSFT, CICC, ER, FET, FFT, IY, NP, OBP, PA, PATHS, PC, PP, PSTATUS, PW, PWC, QOP, SSDP
	MCSLCA, STOP	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
	PSTATUS	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Marengo	MCSLCA, STOP	NP
	PTNDA	QOP, RTC
	LST	NFP, QOP, RTC
Marion	LST	LRP, PP, PSTATUS, QOP, RYP
	PSTATUS	BASICS, CCAA, CTIRHRD, PYPM
	CASA	CBT-CATS, HFA, HNC, NP, PAT
Marshall	LST	LRP, PP, PSTATUS, QOP, RYP
	PSTATUS	BASICS, CCAA, CTIRHRD, PYPM
	CASA	NP
Mobile	MCSLCA, STOP	BASICS, CBT-CATS
	PTNDA	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
	SMART	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Monroe	MCSLCA, STOP	LRP, PP, PSTATUS, QOP, RYP
	LST	BASICS, CBT-CATS
	PTNDA	NP
Montgomery	MCSLCA, STOP	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	PTNDA	NP
	SMART	NP
Morgan	LST	BASICS, CCAA, CTIRHRD, PYPM
	PSTATUS	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
	CASA	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Perry	PTNDA	QOP, RTC
	MCSLCA, STOP	QOP, RTC
	SMART	NFP, QOP, RTC
Pickens	LST	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP
	MCSLCA, STOP	CBT-CATS, HFA, HNC, NP, PAT
	PSTATUS	QOP, RTC
Pike	PTNDA	ABC, MAYM, MGF, MYD, MYM, NFP, NP, QOP

County	Programs Recommended by Student Survey	Programs Recommended by Social Indicator Study
Pike	MCSLCA, STOP	CCAA
	LST	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
Randolph	PTNDA	BASICS, CCAA, CTIRHRD, PYPM
	LST	NP, MTFC, PSP, QOP, RTC
	PSTATUS	NP
Russell	NOT AVAILABLE	CCAA
	NOT AVAILABLE	BASICS, CBT-CATS
	NOT AVAILABLE	NP
Saint Clair	MCSLCA, STOP	LRP, PP, PSTATUS, QOP, RYP
	LST	CCAA, CMCA, CTIRHRD
	PTNDA	NP
Shelby	LST	NP
	PTNDA	CCAA, CMCA, CTIRHRD
	PSTATUS	CBT-CATS, HFA, HNC, NP, PAT
Sumter	MCSLCA, STOP	QOP, RTC
	PTNDA	NFP, QOP, RTC
	SMART	RDI
Talladega	PTNDA	CCAA
	MCSLCA, STOP	NP
	LST	NP, MTFC, PSP, QOP, RTC
Tallapoosa	PTNDA	BASICS, CCAA, CTIRHRD, PYPM
	LST	ATP, ATLAS, CTIRHRD, ER, FFT, PWC, PA, PSUCCESS, PYPM
	PSTATUS	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Tuscaloosa	PTNDA	NP
	MCSLCA, STOP	ATP, BSFT, ER, FFT, PWC, PA, PP, PSTATUS
	SMART	FFT, NP, OBP, PWC, PA, PC, PP, PSTATUS, QOP
Walker	LST	BASICS, CCAA, CTIRHRD, PYPM
	PTNDA	CCAA
	PSTATUS	NP
Washington	LST	QOP, RTC
	PTNDA	QOP, RTC

County	Programs Recommended by Student Survey	Programs Recommended by Social Indicator Study
	MCSLCA, STOP	NFP, QOP, RTC
Wilcox	NOT AVAILABLE	BASICS, CBT-CATS
	NOT AVAILABLE	QOP, RTC
	NOT AVAILABLE	NFP, QOP, RTC
Winston	LST	BASICS, CBT-CATS
	PSTATUS	CBT-CATS, HFA, HNC, NP, PAT
	CASA	NP

Table 6. List of Program Abbreviations

Abbreviation	Program Name
AA	Across Ages
ABC	Any Baby Can Prenatal Education Program
ALERT	Project ALERT
AP	AI's Pals: Kids Making Healthy Choices
ATLAS	Athletes Training and Learning to Avoid Steroids
ATP	Adolescent Transitions Program
BASICS	Brief Alcohol Screening and Intervention for College Students
BSFT	Brief Strategic Family Therapy
CASA	CASASTART
CBT-CATS	Cognitive Behavioral Therapy for Child and Adolescent Traumatic Stress
CCAA	Challenging College Alcohol Abuse
CICC	CICC's Effective Black Parenting Program
CLFC	Creating Lasting Family Connections
CMCA	Communities Mobilizing for Change on Alcohol
CTIRHRD	Community Trials Intervention to Reduce High-Risk Drinking
ER	Early Risers Skills for Success
FET	Family Effectiveness Training
FFT	Functional Family Therapy Program
HFA	Healthy Families America
HNC	Helping the Non-Compliant Child: Parenting and Family Skills Program
IY	Incredible Years
LRP	Leadership and Resiliency Program
LST	(Botvin's) Life Skills Training
MAYM	Meld for African-American Young Mothers
MCSLCA	Multi-Component School-Linked Community Approaches

Abbreviation	Program Name
MGF	Meld for Growing Families
MTFC	Multidimensional Treatment Foster Care Program
MYD	Meld for Young Dads
MYM	Meld for Young Moms
NFP	Nurse-Family Partnership
NP	Nurturing Program
OBP	Olweus Bullying Prevention
PA	Positive Action
PAT	Parents as Teachers
PATHS	Promoting Alternative THinking Strategies
PC	Project CARE
PP	Project PATHE
PSP	Parenting Skills Program
PSTATUS	Project STATUS
PSUCCESS	Project SUCCESS
PTNDA	Project Towards No Drug Abuse
PW	Parenting Wisely
PWC	Parents Who Care: Drug Prevention for Parents of Adolescents
PYPM	Protecting You/Protecting Me
QOP	Quantum Opportunities Program
RDI	Retailer-Directed Interventions
RTC	Raising a Thinking Child: I Can Problem Solve Program for Families
RYP	Reconnecting Youth
SFP	Strengthening Families Program (I and II)
SMART	SMART Leaders
SSDP	Seattle Social Development Project
STOP	Stop Teenage Addition to Tobacco

4. CONCLUSIONS AND RECOMMENDATIONS

WHAT IS THE RELATIONSHIP BETWEEN THE RISK AND PROTECTIVE FACTORS MEASURED BY THE STUDENT SURVEY AND TO THE RISK AND PROTECTIVE FACTORS MEASURED BY SOCIAL INDICATORS STUDIES?

It was discovered that forming a common set of indices based on the Hawkins & Catalano model with which to compare social indicators and student survey data was not possible. The primary reason for this was the failure of the appropriate indicators to correlate with one another. Combining indicators that do not correlate may mask real and significant effects that may be in the data as indicators cancel-out each others' effects. It was for this reason that we decided to attempt a factor analytic model of data reduction as is described in the following section. Factor analysis groups variables based on their correlation structure.

CAN THE SOCIAL INDICATORS BE USED TO PREDICT YOUTH ATOD USE DURING “OFF YEARS” OF THE SURVEY?

A factor analysis was conducted on the social indicator variables following our attempt to validate the Hawkins & Catalano model using an Modified Multitrait-Multimethod Matrix. We discovered three, relatively distinct factors. These three factors were entered into regression models in an attempt to assess their ability to predict student survey risk. The results demonstrated that despite the appeal of the possibility of social indicators being used to estimate youth risk between survey years, our data suggest this would not be prudent. The social indicator factor scores were not able to predict student survey risk.

As a result these findings, it was our suggestion that social indicators and student survey scale scores be examined individually. While student survey and social indicator data may not be summarized and interchanged, they are none the less useful in understanding the risk structures throughout the state.

HOW DO SUB STATE AREAS AND TARGET POPULATIONS WITH HIGHEST RATES OF ATOD USE (BY DRUG) COMPARE WITH SUB STATE AREAS AND TARGET POPULATIONS THAT EXHIBIT HIGH LEVELS OF RISK AND PROTECTION?

Geographic patterns of lifetime substance use were compared to the geographic distributions of risk and protection across the state. A common theme was that lifetime prevalence of use was generally high in areas with high risk and low protection. This was especially clear for marijuana. This reinforces the continued need for prevention

services to focus on risk reduction and increasing protection. In addition, planners may wish to note differences in the *type* of needs present in a county. Counties that have high prevalence rates of risk and usage may require different services from those that have high risk and yet are low on usage. Counties having high risk and low usage and protection may present a special opportunity to intercept a problem before it occurs.

HOW DOES PREVENTION NEED VARY BY DEMOGRAPHIC CHARACTERISTICS?

Age

The geographic distribution of Junior High and High School students were compared on the prevalence of any substance use (excluding tobacco), and the prevalence of any risk and protection. As would be expected, high school students were higher on substance use, with 46 of the 64 counties included in analyses reporting prevalence rates over 80% of lifetime substance use (versus none for the junior high students). High school students also showed higher risk in general and lower protection, as compared to junior high students. Prevention planners may wish to re-double their efforts at increasing protection for high school students overall in addition to focused efforts by county.

Gender

The geographic distribution of male and female students were compared on the prevalence of any substance use (excluding tobacco), and the prevalence of any risk and protection. Male students showed a generally higher and more consistent prevalence of substance use with a large majority between 77% and 82%. Females were generally lower and county prevalence rates represented a wider range of values. Risk was more-or-less evenly distributed across the state for males, while for females it showed a more north-south pattern with the higher rates spread across the south of the state. There was a huge difference between males and females on the measure protection, perceived risks of drug use. Female county scores were almost uniformly higher than males. This result suggests that planners should make concerted efforts to increase the perceived risks of drug use among males.

HOW DOES PREVENTION NEED VARY BY PROGRAM TYPE?

A set of program recommendations based on the student survey and the social indicators data were developed. Each county has a unique profile of program recommendations, based on its local needs. The recommendations from the student survey and the social indicators data are complementary in that student survey tends to focus on risk factors in the individual domain such as perceptions and attitudes, while the social indicators focus more on different types of anti-social behavior. In addition, the recommendations for the social indicators study include programs designed for adults, while the student survey only recommends programs for youth. Both studies also make recommendations for programs focusing on environmental strategies, such as reducing access to substances and developing community laws and norms.

Program recommendations are meant to serve as a resource for planners at the State and local level. Since a variety of programs were recommended for each county, planners can review the table of recommendations and select a subset of programs of interest. They should then research each program in their subset to determine the most appropriate programs for their area. To obtain information on programs of interest, planners can visit the Western Center for the Application of Prevention Technology's (CAPT) Web site (<http://www.unr.edu/westcapt/bestpractices/bestprac.htm>), review published articles, and contact program developers. This process will ensure that planners select programs that not only meet local needs but are practical to implement and appropriate to the target populations.

SUMMARY OF RECOMMENDATIONS

Each needs assessment study contributes to the overall picture of prevention in Alabama. The Student Survey and Social Indicator studies demonstrate the State's prevention needs. Each study highlights needs that the other study does not. Taken together the two studies show a host of statewide and county-level prevention needs. The table of recommended programs paints a unified picture of statewide and county-level need based on these two studies. The Community Resource Assessment study helps to complete the picture by adding information on the services the State's providers make available to its citizenry. The summary that follows presents information and recommendations as potential areas the state may wish to explore further.

This report compiled needs identified in both the student survey and the social indicator study. Where the student survey identified specific risk and protective factors based on the Hawkins and Catalano framework, the social indicator study identified areas the student survey did not address, such as the distribution of children in foster care and the distribution of youth who are already parents or about to become parents. These youth are at tremendous risk for substance abuse problems. The maps in the reports show how the risk factors and other populations at risk are distributed throughout the State. The CRA study, on the other hand, provided useful information on target populations, numbers served, and barriers. Unfortunately, it was not as effective providing the kind of information on programs that we would have liked to have had to make better recommendations about specific programs providers might adopt. This is regrettable because "programs" was a key area the survey was intended to address. The main problem with this assessment was accurate program identification. While the CRA gives a lot of information about program "type" (e.g., life skills), it does not give much information about "specific" programs. That is, programs were not usually identified by name. For instance, the CRA tells us that the majority of providers in all three funding streams provide "life skills" programs, but it does not tell us which life skills programs the providers use (e.g., Botvin's Life Skills). It is therefore impossible to evaluate whether the programs delivering life skills education are using science-based curricula. The best recommendation we can make from the program information is that the three funding streams may wish to collaborate in an effort to reduce program overlap. We cannot suggest that a provider drop one program in favor of another because it is

science-based. We therefore recommend that the State consider expanding Table 5 to include a final column that lists the provider's program names which can then be compared with the recommended programs from the student survey and the social indicator studies.

The state may also wish to focus its efforts on two prevention areas that are decidedly underdeveloped. One important finding that spans all three studies is the apparent need for community and school management programs. This need was shown by both the student survey and social indicator study. This finding coincides with findings in the CRA where providers noted an apparent lack of community interest and involvement in prevention. Perhaps making prevention more visible in the community would stimulate greater awareness, if not interest in prevention. This can be done by developing activities that focus on community change, which include but are not limited to services such as community mobilization, community capacity building, and working to develop and enforce effective laws and policies. These important services can increase public awareness, mobilize the local community, and make the community environment less conducive to substance use.

Another critical finding involves protection from risk and demographics. The six maps displayed on page [X] clearly show that boys and girls are fairly equal on their "risk" for substance use. But the maps on protection tell a different story. Girls appear to be more protected than boys. The substance use maps show that that boys use more substances than girls. One shortcoming in the needs assessment studies is that protection was not as thoroughly measured as risk. This finding therefore suggests a few avenues the State may wish to pursue. First, if the State conducts future studies it may want to review progress in the field in this area and try to get a better measure of protection than what was available at the time this study was conducted. Second, the data at hand suggest that substance use levels are indeed related to protection and finally, boys may benefit from efforts that focus on enhanced protection.

This set of integrated needs assessment studies provides objective data that can help guide prevention planning. Despite some of the study limitations, there is a wealth of information planners can use to bolster State and local prevention efforts. There is certainly a substantial amount of information from which communities can draw to integrate with their own knowledge to better utilize prevention resources. Local area providers are referred back to the student survey and social indicator chart books where county-level profiles are provided. These can be used to assist in both planning and allocating services. This data in conjunction with the program recommendations, based on each county's risk levels, should be extremely useful when choosing new programs to implement. At the State level the data can be used to provide information on planning and evaluation as it relates to the State Incentive Grant (SIG), and the State can use these data to enhance its statewide prevention strategies.

Future needs assessment efforts should capitalize on the findings of these studies, from both a success and a limitations perspective. The results and findings provide the State with a benchmark for future comparisons. Future needs assessment results can be

compared with the results from these studies and can provide the State with useful evaluation information. At the macro level the State can then assess whether new prevention efforts funded under its SIG award are effective at reducing substance use and risk and increasing protection as they have been identified in these studies. Future needs assessment studies may also confirm whether efforts to reduce gaps in services and barriers to service are successful. Lastly, but probably most importantly, future studies will show whether the groundwork laid from these studies did indeed provide the State with a springboard from which to revisit its prevention goals and strategies and whether those goals are met and its strategies are successful.

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